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# The New Zealand Container Return Scheme Design

Ministry for the Environment Funded Project

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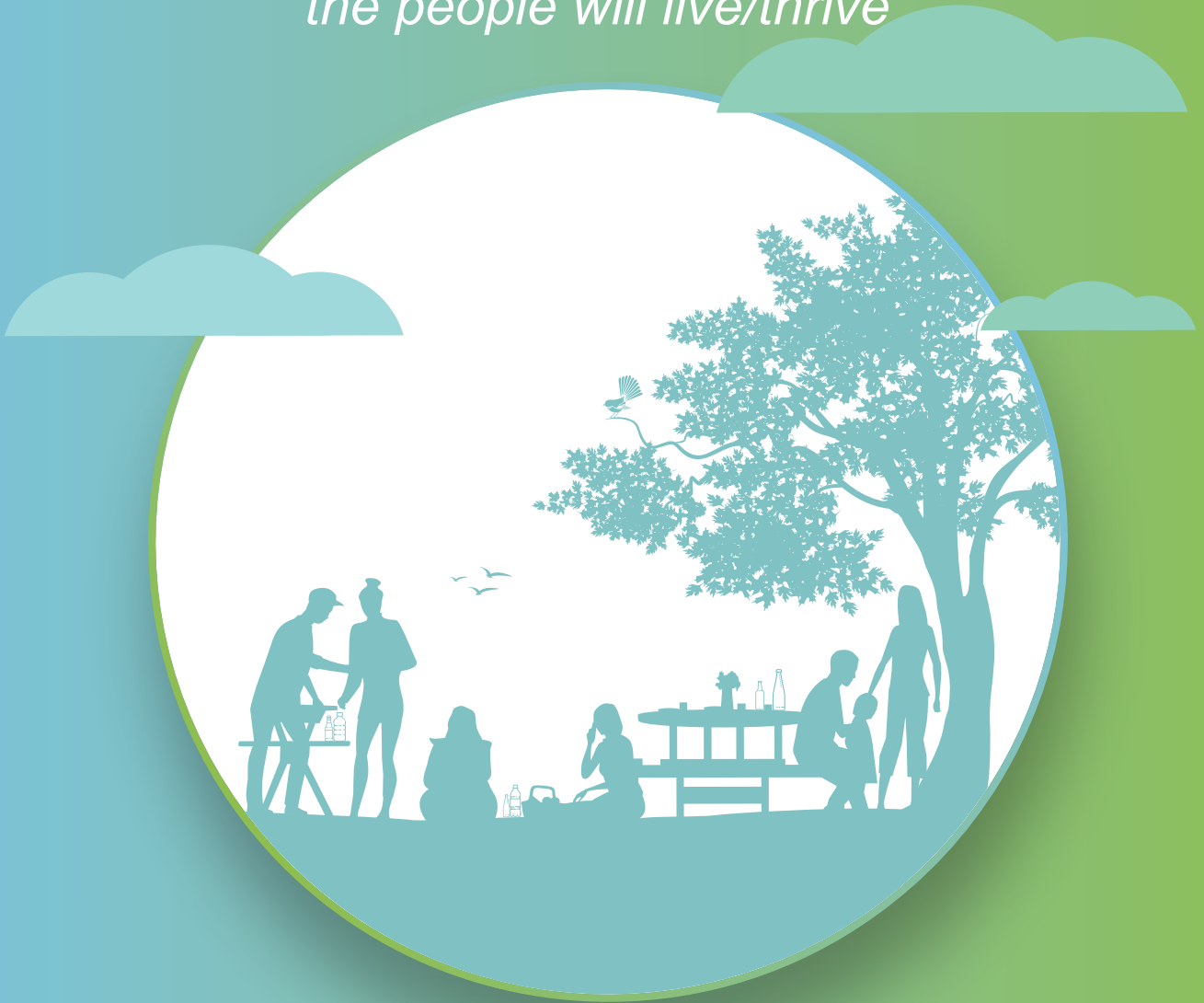
## NZ CRS Final Design





*“Nāku te rourou nāu te  
rourou ka ora ai te iwi*

*With your basket and my  
basket  
the people will live/thrive”*





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## Preface

This bespoke Aotearoa New Zealand Container Return Scheme Design represents the culmination of time and commitment of many individuals from within Aotearoa New Zealand and abroad. The input and critique provided has resulted in a design that is focussed on providing benefits and opportunities to the people of Aotearoa New Zealand whilst supporting our transition from a linear economy to ōhanga āmiomio - circular economy.

It is acknowledged that this transition will require time and the collective efforts from everyone, including for example, central government, the waste and resource management industry, beverage producers, retailers and consumers – each participant representing an important group of stakeholders in Aotearoa New Zealand’s success.

This New Zealand Container Return Scheme Design builds on the foundations established by many people who have gone before and contributed knowledge and expertise; including Warren Snow who has been instrumental in creating the basis on which this Design has further evolved. The following sections provide a detailed evidence-based approach to the establishment of the key components which form the structure of the New Zealand Container Return Scheme Design. Complementing this approach, WE are grateful to the time and input from the many national and international stakeholders, listed on the earlier pages, all of whom have contributed vast amounts of knowledge and expertise to the design process.

WE acknowledge that this design represents a significant step forward towards implementing the New Zealand Container Return Scheme and look forward in anticipation of the continued journey this Design will have over the coming years. The ultimate implementation of the New Zealand Container Return Scheme will represent an enormous step forward as a nation, whilst providing a legacy for those who are yet to follow and make their own.

It has been a privilege to have been a part of such a nationally significant project by providing collective knowledge, determination and commitment to ensuring this New Zealand Container Return Scheme is designed for the benefit of all New Zealander’s.

*The Author*





## Abbreviations, Acronyms and Terminology

Abbreviation	Definition
ABC	Associated Bottlers Company Limited
ABCRC	Alberta Beverage Container Recycling Corporation
ABDA	Alberta Bottle Depot Association
ACT	Australian Capital Territory
ADF	Advanced Disposal Fee - Fees levied on certain products based on the estimated costs of collection and treatment with fees used to finance post-consumer treatment of specified products
AMRF	Advanced Material Recycling Fee - An additional fee (or negative fee) to reflect the cost of recycling a given material. It may also incentivise a shift to materials which are easier and more cost effective to recycle
AUD	Australian Dollars
AWT	Alternative Waste Treatment Facility
CAPEX	Capital Expenditure
CEO	Chief Executive Officer
Circular economy	Keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of their usefulness and/or service life
COEX	Container Exchange (Queensland Container Return Scheme)
Container Return Facility	The facility (includes automated and manual facilities) at which consumers return eligible scheme containers for the appropriate refund
Collection Point Operator	Operators of container return facilities
Combination Tax/Subsidy	A tax paid by producers to subsidise waste treatment, by providing producers with incentives to alter their material inputs and product design whilst providing a financing mechanism to support recycling and treatment
Common Collection System Agent	Means the agent appointed to the collection of containers – Beverage Container Recycling Regulation Alberta Regulation 101/1997  The Alberta “common collection system” means a container collection system that does not distinguish containers of similar size and material from each other based on the manufacturer of the container
CPI	Consumer Price Index
CRS	Container Return Scheme
Deposit	A NZ CRS deposit fee that is fully refunded to the consumer when a eligible scheme container is returned to a container return facility
Deposit Initiator	The deposit initiator is the first bottler, distributor, dealer or agent to collect the refund value (deposit) on a beverage container sold in New York State
Deposit Refund	A deposit paid by the consumer at the time of purchase which is refunded when the item is returned
DPG	Deutsche Pfandsystem GmbH
DRS	Deposit Return Scheme
EAN	European Article Number
End-of-Life Management	The responsibility of producers under Extended Producer Responsibility, often implies that producers often bear the real full costs of managing the end-of-life of their products to optimise environmental performance, including waste management such as disposal methods
EPA	Environment Protection Authority
EPR	Extended Producer Responsibility

Abbreviation	Definition
EU	European Union
FOB	Free On Board
First Supplier	Defined by the New South Wales Container Deposit Scheme First Supply Approach as a supplier who makes the first supply of beverages in a container only needs to ensure that a container approval is in force that applies to the relevant container
Free-riding	Defined as those producers who benefit from EPR systems without contributing their share of the system costs
Glass Beneficiation Factory	Facility where glass is colour sorted, contaminants are removed and glass is crushed to produce cullet
Governance Board	To provide the strategic directives to the Managing Agency to support the schemes operation and goals as well as community and environmental based initiatives
GS1 Standards	The GS1 General Specifications is the core standards document of the GS1 system describing how GS1 barcodes and identification keys should be used.
GST	Goods and Services Tax
GTIN	Global Trade Item Number
HDPE	High-density polyethylene (HDPE) or polyethylene high-density (PEHD) is a thermoplastic polymer produced from the monomer ethylene. With a high strength-to-density ratio, HDPE is used in the production of plastic bottles, corrosion-resistant piping, geomembranes and plastic lumber. HDPE is commonly recycled (recycling number 2). It is estimated that in 2007, the global HDPE market reached a volume of more than 30 million tonnes
HSNO	Hazardous Substances and New Organisms Act 1996
HSWA	Health and Safety at Work Act 2015
KESAB	Keep South Australia Beautiful
KPI	Key Performance Indicator
KPMG	KPMG International Cooperative is a multinational professional services network, and one (1) of the Big Four accounting organizations
KNZB	Keep New Zealand Beautiful
L	Litre
LDPE	Low-density polyethylene (LDPE) is a thermoplastic made from the monomer ethylene. It is estimated that 5.7% of LDPE (recycling number 4) is recycled. Despite competition from more modern polymers, LDPE continues to be an important plastic grade
LGNZ	Local Government New Zealand
Lightweighted	Process to remove weight from glass containers while retaining strength
Linear economy	Products used for every-day life are often designed with limited thought for the life cycle of the product meaning the majority of products currently produced and the behaviours by which consumers purchase and use these products is linear (take-make-dispose) in nature
LPB	Liquid Paperboard
LSF	Living Standards Framework
Managing Agency	The entity responsible for the operation and the performance of the container return scheme
Material Taxes	Taxing specific materials (or materials that are difficult to recycle or contain environmentally harmful elements) to incentivise the use of other material including recycled or less environmentally harmful material. The OECD recommends the tax be allocated for the collection, sorting and treatment of post-consumer products.
mL	Millilitre

Abbreviation	Definition
MCF	Material Consolidation Facility
MfE	Manatū Mō Te Taiao - Ministry for the Environment
MRF	Material Recovery Facility
MRF Operator	The organisation(s) responsible for the operation and management of the MRF
MtCO <sub>2</sub> e	Metric tonnes of carbon dioxide equivalent
Network Operator	The operator (i.e., TOMRA Cleanaway) responsible for the network of collection points in New South Wales, Australia
NIAS	Non-intentionally Added Substances
NOK	Norwegian Krone
NZ CRS	New Zealand Container Return Scheme
NZD	New Zealand Dollars
NZ ETS	New Zealand Emissions Trading Scheme
NZ GPF	New Zealand Glass Packaging Forum
OBRC	Oregon Beverage Recycling Cooperative
OECD	Organisation for Economic Co-operation and Development
O-I	Owens-Illinois Glass Limited
OPEX	Operational Expenditure
Priority Product	A product declared to be a priority product in accordance with Section 9 of the Waste Minimisation Act 2008
PCBU	Person Conducting a Business or Undertaking
PET	Polyethylene terephthalate (sometimes written poly(ethylene terephthalate)), commonly abbreviated PET and is used in containers for liquids and foods (recycling number 1)
POS	Point of Sale
PP	Polypropylene (PP), also known as polypropene. Polypropylene is a widely produced commodity plastic and it is often used in packaging and labelling (recycling number 5)
PRN	Packaging Recovery Note
PRO	Producer Responsibility Organisation (the NZ CRS equivalent organisation is the Managing Agency)
PV	Present Value
Recyclate	Raw material sent to, and processed in, a waste recycling plant or materials recovery facility
Recycling	The processing of waste or diverted material to produce new materials (Waste Minimisation Act 2008)
RMA	Resource Management Act 1991
RRC	Resource Recovery Centre
RVM	Reverse Vending Machine
Scheme Fee	A scheme fee covers the costs of recycling an average container through the NZ CRS, including the costs of the container return facility, scheme Material Consolidation Facility and scheme Managing Agency
SDWG	Scheme Design Working Group
Scheme Coordinator	The organisation appointed in New South Wales, Australia (i.e., Exchange for Change) to ensure the scheme meets access and recovery targets
SEK	Swedish Krone
Single-Use Plastic Items	Products made wholly or partially from plastic, and which are primarily conceived to be used only once (or a few times) before they are thrown away. The definition also includes single-use paper items with plastic lining, such as cups and plates made of paper but with a plastic layer

Abbreviation	Definition
	(also called plastic-coated paper)
TAFE	Technical and Further Education
TAG	Technical Advisory Group
Tetra Brik	Brand name for a carton produced by Tetra Pak
TLA	Territorial Local Authority
TSX	Toronto Stock Exchange
Unredeemed or Unclaimed Deposit	Refund amounts (deposits) that have been paid on eligible scheme containers, but the containers are not redeemed through the scheme (e.g., containers are discarded to landfill, containers discarded to the environment in the litter stream, recycled through other means or lost)
UPC	Universal Product Code
USAD	Užstato Sistemų Administratorius (Lithuania's scheme administrator)
USD	United States Dollar
VFD	Value For Duty
WDOP	Western Downs Outreach Project
WMA	Waste Minimisation Act 2008
WMMP	Waste Management and Minimisation Plan
WRSC	Wildlife Rescue South Coast

## Executive Summary

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On the 25<sup>th</sup> September 2019, the Associate Minister for the Environment the Honourable Eugenie Sage announced<sup>1</sup> progression of the development of a bespoke Container Return Scheme for Aotearoa New Zealand. Acknowledging the approximate forty (40) Container Return Schemes operating globally including the majority of states in Australia, project approval for the design of a bespoke Aotearoa New Zealand Container Return Scheme (NZ CRS) was given in November 2019.

The outcomes and recommendations of the design process for the NZ CRS are presented in this NZ CRS Design Report. This NZ CRS Design Report is structured into eighteen (18) discrete sections each representing an important building block in the design of the bespoke 'Kiwi' Container Return Scheme. This report brings together evidence-base and expert opinion culminating with the NZ CRS design and next steps toward implementation.

### Introduction

The intent of the NZ CRS design process was to develop the best national scheme based on best international practice that was bespoke to Aotearoa New Zealand and developed in alignment with social, cultural, economic and environmental scheme outcomes. The outcome of the process is a comprehensive and bespoke 'Aotearoa' NZ CRS design recommendation to the Manatū Mō Te Taiao - Ministry for the Environment, that subject to government approval, can be advanced to the consultation and implementation phases.

*To develop the best national container return scheme based on best international practice that is bespoke to Aotearoa New Zealand and developed in alignment with social, cultural, economic and environmental scheme outcomes.*

To facilitate the design, representatives from kaitiakitanga whakanaonga - product stewardship groups, Mana Whenua, beverage producers (non-alcohol and alcohol), packaging and hangarua - recycling industries, local authorities, charitable organisations, retailers, recyclers (collectors, processors and community/social enterprises), consumer advocacy, container manufacturers and rangatahi - youth were engaged through a Scheme Design Working Group (SDWG) to ensure collective views and considerations were received and integrated where possible in the design of the NZ CRS. By engaging with a wide range of stakeholders and organisations, the NZ CRS design recommended in this report provides Aotearoa New Zealand with a solution that engages with society and industry and is designed for the benefit of all New Zealanders.

The design of a bespoke Aotearoa New Zealand Container Return Scheme (NZ CRS) was based on the following three (3) key project outcomes:

1. Change the way Aotearoa New Zealand values beverage containers that will see increased hangarua - recycling and new opportunities for refilling;
2. Reduce the volume of plastics and other container litter currently ending up in our streams (i.e., awa – waterways), moana - marine environment, wāhi tūmatanui - public spaces and ruapara -landfills; and
3. Give effect to ōhanga āmiomio - circular economy outcomes and any future priority product guidelines.

The methodology for the design of the bespoke NZ CRS was undertaken in three parts:

1. Part 1 – In depth research of global Container Return Schemes;
2. Part 2 – In-depth New Zealand stakeholder feedback; and
3. Part 3 – Financial modelling process.

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<sup>1</sup> <https://www.beehive.govt.nz/release/work-underway-beverage-container-return-scheme>

This report provides a detailed assessment of a range of global container return schemes as well as feedback received from the SDWG to help inform and shape the design of the bespoke NZ CRS.

## New Zealand Container Return Scheme - Setting the Scene

Internationally, there are over forty (40) container return schemes, in countries such as Germany, Lithuania, Australia, Canada and Norway with countries now seeing the significant benefits these schemes have for the economy and society. Adelaide, South Australia has the longest running scheme at 42-years and reporting an overall return rate of 76.4%. The global waste market is changing at a rapid pace with plastic waste becoming a major commodity used in end-of-life products on a global scale. Historic data suggests plastic production has outpaced almost every other manufactured material. The establishment of global container return schemes has been a key initiative in assisting governments move from a linear economy to *ōhanga āmiomio* - circular economy where manufactured products are used and then returned, with the overall aim to reduce the amount of waste entering our taiao - environment.

To help reduce the amount of waste produced, the New Zealand Government is encouraging producers, brand owners, importers, retailers and consumers to take greater responsibility to transition from a linear to *ōhanga āmiomio* - circular economy. Measures include the identification of six (6) priority products and the establishment of regulated *kaitiakitanga whakanaonga* - product stewardship schemes. In the Aotearoa New Zealand context, the transition from a linear economy to *ōhanga āmiomio* - circular economy aligns with *mātauranga Māori* to protect and uphold the *mana* and *mauri* of *Papatūānuku*. In line with this, 83% of New Zealander's support the establishment of a NZ CRS with 90% of Local Government New Zealand (LGNZ) endorsing a nationally mandated NZ CRS to be in place within a 2-year period.

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*The transition from a linear economy to *ōhanga āmiomio* - circular economy aligns with *mātauranga Māori* to protect and uphold the *mana* and *mauri* of *Papatūānuku*.*

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The amount of waste currently produced in Aotearoa New Zealand is a major problem, and the level of beverage and other container recovery is moderate. According to the Organisation for Economic Co-operation and Development (OECD), Aotearoa New Zealand is one of the highest producers of municipal waste in the OECD. A recent litter survey was carried out by Keep New Zealand Beautiful (KNZB) and of the main material types reported, cigarette butts/vaping were reported as the most prevalent litter item nationally (39 butts per 1,000m<sup>2</sup>), however plastic items (e.g., drink pouches, milk containers, soft drink bottles, plastic bags) contributed 29 items per 1,000m<sup>2</sup> followed by paper/cardboard (15 items), metal (14 items) and glass (12 items). Further, the KNZB survey also included a survey of branded litter which included any item with a recognisable brand name or logo printed on it. Of the branded beverage containers recorded by industry category, alcoholic beverage containers and packaging represented the largest proportion by weight (49.6%) followed by snacks wrappers and packets (23.9%), non-alcoholic beverage containers and packaging (14.3%), takeaway food drink container and packaging (7.8%) and milk beverage containers and packaging (2.1%).

Large quantities of these resources are lost to disposal, with the recycling rates of beverage containers (glass, plastic, cans) being between 45-58%. With the implementation of the NZ CRS, recycling rates are expected to increase to between 79-82%, leading to the reduction in the amount of litter and providing a range of financial benefits through measures such as job creation, industry growth and innovation, improved public awareness and engagement in resource efficiency.

A major quantity of the collected recycled materials in Aotearoa New Zealand are exported, with international reports suggesting that worldwide *hanganu* - recycling markets will continue to grow to the year 2024. Of the plastics recycled in Aotearoa New Zealand, approximately 90% of the volume is exported. Of the non-ferrous metals (e.g., aluminium and tin) quantities collected from kerbside, greater than 95% is processed and exported to offshore markets. All glass collected via kerbside collections is at this stage reported to be recycled onshore with no proportion of this volume exported. The quality of a material commodity is a significant consideration when determining its value and hence any final end-



market. Acknowledging the inconsistent kerbside collection methodologies across Aotearoa New Zealand and the potential for contamination from comingled services, the processing (e.g., sorting, removal of contaminants) of materials is critical to ensure materials receive the best price when traded on the international commodity markets.

Additionally, there are ongoing global developments in increasing the quality of imported recyclable materials. Due to recent international market changes such as restrictions by China on the importation of waste and recyclables there is now a need to critically assess current waste infrastructure to determine investment requirements to support the growth of onshore processing, as well as supporting kaitiakitanga whakanaonga - product stewardship scheme such as the implementation of the NZ CRS.

To support this process, the New Zealand Government has established and enacted several key legislative documents that set the requirements for waste minimisation and management and has ratified several international agreements to manage Aotearoa New Zealand's impact on the global waste sector. Further, the cost of landfill disposal has had an influence on product recovery with disparity amongst the national cost of landfill disposal (e.g., \$200-\$280/tonne to \$50/tonne) resulting in disparate behaviours by the waste industry and different levels of investment throughout the country. Acknowledging this fact, the New Zealand Government announced an increase in the waste levy with the current rate of \$10/tonnes set in 2009 increasing to \$20 by 01 July 2021, \$30 by 01 July 2022, \$50 by 01 July 2023 and \$60 by 01 July 2024 and extending the levy to cover additional landfill types including industrial and construction and demolition fills (but not cleanfills or farm dumps). This increase in the waste levy is anticipated to increase investment in alternatives to landfill disposal in keeping with the objectives of the Waste Minimisation Act 2008.

## Scope of Containers

### The Aotearoa New Zealand Context

Acknowledging the outcomes of the research and feedback received from the SDWG, the NZ CRS will initially include all single-use beverage containers supported by a bespoke NZ CRS legislative instrument that enables the scope of containers to be expanded in the future to include, for example, kitchen, laundry, bathroom, garage and garden products. The results of the ConsumerNZ survey undertaken in early 2020 noted that 64% of respondents supported the inclusion of all containers made of plastic, glass and metal with a further 67% noting that it must be easy to understand what containers are covered within the NZ CRS. To achieve this, 62% noted the need for good information to be provided to consumers including the type of eligible containers.

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*The total number of eligible scheme containers in Aotearoa New Zealand at the anticipated NZ CRS 'go live' date of 01 July 2022 is expected to be approximately 2.3billion beverage containers, comprising approximately 790million plastic, 125million liquid paperboard, 510million metal and 925million glass containers.*

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Further, an important consideration for scheme collected material is the availability of end-markets. In the Aotearoa New Zealand context, the transition from a linear (take-make-dispose) economy to ōhanga āmiomio - circular (make-use-return) economy, that builds on the principles of the pūnaha whakarōpū para - waste hierarchy, will take time, and industry support and a range of other factors will need to be assessed and developed, including the establishment of material re-processing infrastructure and pull-through demand of materials. This transition may also support the reinvigoration of the Aotearoa New Zealand refillables market which the NZ CRS may be able to support (e.g., financial support, shared use of container collection infrastructure [container return facilities]).

To understand the number of eligible containers in Aotearoa New Zealand, a financial model was developed to understand the cashflows of operating the NZ CRS. The total number of eligible scheme containers in Aotearoa New Zealand at the anticipated NZ CRS 'go live' date of 01 July 2022 is expected to be approximately 2.3billion beverage containers, comprising approximately 790million plastic, 125million liquid paperboard, 510million metal and 925million glass containers. Looking at these

numbers in more detail, the total non-alcoholic and alcoholic container count can be split into the following categories:

- Non-alcohol (approximate container count) – 1.3billion
  - Other non-alcohol – 150million
  - Ambient juices – 30million
  - Carbonated beverages – 380million
  - Chilled juice and drinks – 28million
  - Milk products – 635million
  - Water – 110million
- Alcohol (approximate container count) – 1billion
  - Wine – 120million
  - Cider – 43million
  - Beer – 615million
  - Other alcohol – 230million

## Key Findings

Typically, global container return schemes include all single-use beverage containers with variations of the types of beverages and the materials accepted dependent on the particular global container return scheme container acceptance criteria, availability of end-markets and scheme objectives.

Generally, eligible and ineligible single-use beverage containers are defined by several factors, including the type of container, the size, container acceptance criteria and scheme labelling. Despite the variability across the range of global container return schemes, most schemes either include all ready-to-drink beverages or one (1) or more of the following broad eligible and ineligible container groups:

- Carbonated and non-carbonated soft drinks
  - Including energy and sports drinks, cola, and ready to drink cordials
- Fruit and vegetable juice
  - Including coconut juice and fruit juice
- Alcoholic beverages
  - Including, beer, stout, ale, wine, cider and spirits
- Carbonated and mineral water
  - Including sparkling and still water
- Milk products
  - Including milk and drinkable yoghurts (e.g., fermented dairy products)

Ineligible containers typically include those single-use ready to drink beverage containers that are greater than the respective scheme eligible container volume and specific container acceptance criteria. Most eligible containers included in global schemes include containers (plastic, metal, glass, liquid paperboard) up to 5L with some schemes accepting containers up to 20L. Several countries also include refillable containers under either a voluntary or compulsory refillable deposit requirement.

To track and monitor eligible scheme containers, many schemes have implemented fraud mitigation measures to ensure legal compliance with specific scheme requirements. In most cases, specific conditions of acceptance (e.g., size, type, material) are implemented via scheme legislative instruments to manage the eligible scheme containers. Where global container return schemes encounter cross-boundary issues, barcodes and/or other unique scheme labels are implemented to reduce these issues. Where barcodes are used these are often coupled with a specific scheme refund marking providing a means of container identification and verification whilst also providing a means to minimise fraud and verify data. Additionally, many schemes

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*All single-use beverage containers less than or equal to 4L in volume will be included in the NZ CRS.*

*The NZ CRS will not preclude other types of containers, such as kitchen and laundry products, from being included in the scheme in the future.*

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recognise the complexities for scheme participants to ensure processes and procedures as well as scheme registered products are in place at the start of a scheme. As such, to assist producers, manufacturers and retailers to become compliant with scheme requirements, transition period requirements (e.g., eligible container labelling) are commonly put in place.

### Component(s) to be Included in the New Zealand Container Return Scheme Design

Considering the key findings and feedback from stakeholders involved in the NZ CRS design, the Project Team are of the view that all single-use beverage containers less than or equal to 4L in volume will be included in the NZ CRS. Single-use beverage containers that currently do not have an end-market (e.g., liquid paperboard) will not be excluded from the scheme as that would commercially advantage these types of materials and products over products that can be more effectively recycled. Additionally, the design of the NZ CRS will not preclude other types of containers, such as kitchen and laundry products, from being included in the scheme in the future.

Additionally, the NZ CRS Project Team has consulted with the SDWG and other stakeholders, including central government departments regarding the inclusion of an Advanced Material Recycling Fee (AMRF). Materials that are difficult to recycle or problematic such as liquid paperboard may need to incur additional cost to see them successfully recycled while other materials may receive a net income such as aluminium. The NZ CRS Managing Agency will be responsible for the timing of when materials will be included in the NZ CRS, including the associated value of the AMRF.

Eligible containers are to have specific conditions of acceptance, including a barcode, QR code, or other form of unique identification. Eligible containers are to include all single-use beverage containers in all material types (e.g., PET, HDPE, LPB, glass) and container types (e.g., sachets, pouches, bottles), in volume less than or equal to 4L. Ineligible containers are to include non-single-use containers such as bathroom, kitchen, laundry, garage, garden shed products, however, this does not preclude these types of containers from being included in the scheme in the future.

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*Eligible containers are to have specific conditions of acceptance, including a barcode, QR code, or other form of unique identification.*

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Further, it is important that registered container return facilities have the discretion to reject containers based on material identification in accordance with the requirements of the Managing Agency and the NZ CRS legislative instrument. The container conditions of acceptance for eligible containers will include:

- All eligible containers to be labelled which may include a unique scheme label;
- The unique scheme label to indicate the deposit amount and, for example, a barcode, and/or QR code, and/or security logo, which must be legible to be accepted for a refund;
- Eligible containers to be empty of contents and must not be contaminated with substances that make the container a health risk or unsuitable for recycling;
- Eligible containers to be whole, intact and not be broken, however it may be crushed depending on the preferences of the container return facility and requirements as determined by the Managing Agency; and
- Container lids to be removed by the consumer at the point of return.

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*Suppliers that intend to sell (export) eligible containers outside of Aotearoa New Zealand will be eligible for a refund.*

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Suppliers that intend to sell (export) eligible containers outside of Aotearoa New Zealand will be eligible for a refund of the scheme deposit with the Managing Agency being responsible for establishing and implementing appropriate import and export control measures.

The refillables market is to be promoted by the Managing Agency. This is in alignment with the three (3) key project outcomes for the NZ CRS. Options for promoting the refillables market include funding and promoting the benefit and awareness of refillables as a preferred choice to New Zealanders, working with existing Aotearoa New Zealand refillable schemes to identify and remove barriers, investing in

infrastructure by addressing barriers such as the return, re-washing and refilling of bottles, ensuring that the method of return by customers is convenient and accessible, establishing NZ CRS container return facilities that can accept, sort and store for transportation both eligible single-use and reusable beverage containers, facilitating the uptake of reusables through the integration of strategic directives embedded within the NZ CRS scheme performance indicators, and securing the funding to achieve the above from the scheme (e.g., unredeemed deposits and/or levy on single-use containers).

## Container Return Facilities

### The Aotearoa New Zealand Context

Based on the survey undertaken by ConsumerNZ, 79% reported convenient drop-off points (i.e., container return facilities) and 67% reporting the need for easy to understand information regarding what containers the scheme covers as two (2) key factors for the success of the NZ CRS. Of those surveyed 70% noted that supermarkets would provide the most convenient place to return scheme eligible containers followed by 63% at collection depots (e.g., community recycling centres and recycling facilities), 40% to other retail outlets (e.g., bottles stores and dairies) with the remaining 8% noting other locations or would not bother returning the containers.

To understand the number of container return facilities required across Aotearoa New Zealand to cater for the anticipated 2.3billion eligible containers and provide a convenient and accessible service to New Zealanders, the container count per region was overlaid with community resource recovery centres, indicative over-the-counter locations to service those areas without a community resource recovery centre, and the locations of the PAKnSAVE, Countdown, Fresh Choice, New World and SuperValue grocery supermarkets. Acknowledging Aotearoa New Zealand's population spread it was clear that the known network of community resource recovery centres needs to be complemented with, for example, over-the-counter facilities (or other form such as RVMs, return-to-retail) to provide a service to consumers who reside in regional/remote areas of Aotearoa New Zealand. Similarly, while there is greater national coverage of grocery supermarkets, there are clearly areas of Aotearoa New Zealand that are not well serviced by grocery supermarkets and which would to benefit from another type of container return facility such as community resource recovery centre or RVM. In some instances, the use of pop-up or mobile container facilities may be appropriate. Further, it should also be noted for clarity that NZ CRS container return facilities will be contracted by and registered with the Managing Agency to ensure compliance with scheme requirements now and in the future. On the other hand, eligible scheme containers will be 'registered' with the Managing Agency to ensure they meet the relevant scheme requirements.

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*The NZ CRS to initially establish approximately 415 container return facilities by the 'go live' date of 01 July 2022 (equating to approximately 12,500 people per container return facility with a projected 2023 population of 5.213million).*

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Based on learnings from overseas, feedback from the design process, results of the ConsumerNZ survey and the outputs from financial modelling, it is proposed that the NZ CRS initially establish approximately 415 container return facilities (e.g., manual depots, RVMs, automated depots) across Aotearoa New Zealand assuming the NZ CRS starts (i.e., 'go live') on 01 July 2022 (equating to approximately 12,500 people per container return facility with a projected 2023 population of 5.213million).

Another important consideration in the establishment of NZ CRS container return facilities is the opportunity to create employment across Aotearoa New Zealand. While the number of jobs created by a NZ CRS will largely depend on the make-up of the various container return facility type (e.g., RVM, manual collection depot), it is acknowledged that in some cases the use of technology may limit the opportunities presented by the NZ CRS. As a result, further investigation will be required in the implementation stage to ascertain the net employment gain. Looking at the current Aotearoa New Zealand spread of ZWN sites and using global information on container return scheme job estimates and container numbers/volumes, it has been reported that the NZ CRS may result in approximately 2,230 direct jobs (NOTE: approximately 2.3billion eligible scheme containers,

approximately 304,000 tonnes of eligible scheme material, container return scheme generates 7.34 jobs per 1,000 tonnes of material). While the type and nature of these potential employment opportunities will require further investigation during the implementation stage, the NZ CRS has the potential to provide the Aotearoa New Zealand economy in a post COVID-19 environment with an avenue to create meaningful work and enterprise opportunities for people in their own communities.

## Key Findings

The research found that a wide range of manual and automated container collection methodologies are employed throughout global container return schemes and that these provide, for example, differing container return rates, varying employment opportunities and different levels of customer convenience.

However, it is important to note that when looking at container return rates, the maturity (i.e., years of operation) of a container return scheme, as well as several other factors such as the location of return facilities, deposit level and consumer understanding of the scheme can have an influence on container return rates.

Broadly, it was found that schemes that employ a combination of manual (e.g., manual depot) and automated (e.g., Reverse Vending Machine) container return facilities generate high container return rates coupled with a higher rate of employment opportunities, customer convenience and a wider range of options for customers to redeem the refund amount, such as cash, voucher, electronic funds transfer and donation. Return-to-retail facilities were found to be associated with high return rates, where the retailer provides a convenient location for customers to return eligible containers, such as through RVMs located in a carpark or instore. Further, container return schemes with a mandatory return-to-retail option rather than a voluntary approach were generally associated with higher return rates.

The customer's engagement in the container return scheme was also found to be influenced by a range of factors such as the number, type and location of container return facilities. Customer convenience and accessibility (e.g., opening times, proximity to convenient locations) were found to be key aspects for determining the location and number of collection facilities, with acknowledgment that the cost of a customer centric service can be greater than a commercially orientated service. Customer focussed and convenient container return schemes include a range of refund options including cash, electronic funds transfer, supermarket voucher, donation or scheme credits (e.g., loyalty card, gift card).

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*For optimum scheme performance, including supporting consumer convenience and accessibility, a range of container return facilities will be included in the NZ CRS design.*

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Further, the arrangements associated with the transportation of collected containers to a scheme Material Consolidation Facility, Material Re-Processor and/or direct to end-markets differed across the global container return schemes depending on the material ownership, sale of products and associated revenue arrangements. Across all global schemes, container verification and fraud prevention measures are key components in managing the sale and transportation of materials as is the redistribution and/or reinvestment of revenue generated from the sale of material.

## Component(s) to be Included in the New Zealand Container Return Scheme Design

Considering the key research findings and feedback from the SDWG, the Project Team are of the view that for optimum scheme performance, including supporting consumer convenience and accessibility, a range of container return facilities will be included in the NZ CRS design. It is proposed that approximately 415 container return facilities will be established across Aotearoa New Zealand, assuming a NZ CRS 'go live' date of 01 July 2022. The establishment of the network of container return facilities will need to consider factors, including but not limited to, Aotearoa New Zealand's existing infrastructure and population densities (e.g., rural, urban). The NZ CRS Managing Agency will be

required to monitor the performance of each geographical area and take appropriate action as required such as working with container return facilities, establishing more return sites and increasing awareness. The success of a bespoke NZ CRS design will be underpinned by ensuring the active engagement, convenience and accessibility for consumers. To provide a convenient and accessible service to consumers, container return facilities will be established to, for example, operate after-hours and weekends, be located in proximity to customer convenience locations such as supermarkets, petrol stations, and access points (e.g., transportation routes) and provide for safe access. To encourage the engagement of consumers, container return facilities are to provide customers with scheme information, for example, in line with consistent marketing (e.g., marketing toolkit) set by and managed by the Managing Agency and to be in bi-lingual and multi-lingual options. Convenience will be provided through:

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*The success of a bespoke NZ CRS design will be underpinned by ensuring the active engagement, convenience and accessibility for consumers.*

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- Sufficient container return facilities at convenient locations that enable customers to redeem their containers in a secure and efficient manner with minimal transaction times and at the same time ensure the return facilities are cost-effective and financially viable.
- A range of manual and automated container return facility types and/or other means of collection (e.g., charity, marae or school collection) that considers New Zealand's broad geography (e.g., rural, residential, central city areas).
- Manual container return facilities that may also provide for additional customer services (e.g., collection of other recyclable materials such as ineligible containers, paper and cardboard, scrap steel and household items for recycling) and additional kaitiakitanga whakanaonga - product stewardship schemes such as tyres, e-waste, Agrecovery containers.
- Container refunds to include cash, electronic funds transfer, supermarket voucher (including, for example, a 2-year expiration date), donation, other (e.g., scheme credit system, loyalty card, gift card). The scheme Managing Agency is to have flexibility to expand the range of refund options.

Best practice design guidelines will also be established for all container return facilities with all facilities required to be registered with the Managing Agency. The Managing Agency will be responsible for the procurement of container return facilities, including the incorporation of social and indigenous procurement elements, such as the establishment of employment number targets for manual collection depots. Appropriate transportation logistics providers and/or back-haul arrangements will also be utilised to reduce the schemes carbon footprint and utilise existing services, for example, that may already be in operation in remote/regional areas. The establishment of collection service contracts are also to be managed by the Managing Agency.

Manual container return facilities are to include Manual Collection Depots, Over-the-Counter Facilities, and Bag-Drop Facilities. The Manual Collection Depots will cater for immediate counting and provision of customer refunds for eligible containers. Customers who return over 1,500 containers are to complete written container declarations as a fraud prevention measure. Manual collection depots are to have the opportunity to reject a customer's containers where containers do not meet the container acceptance criteria as specified by the Managing Agency and included in the NZ CRS legislative instrument. Clear processes and guidance will be provided should existing container return facilities elect to become a part or whole scheme Material Consolidation Facility.

Over-the-Counter facilities will be considered in areas where other return facilities are not suitable. The facility may be limited to accepting small quantities, such as less than 100 eligible containers per customer, and the refund option may be limited to cash only or voucher for use in store. The Over-the-Counter conditions, such as, minimum sales area and storage capacity will be set by the Managing Agency.

Bag-Drop Facilities will be included alongside manual collection depots for customer convenience. The facilities will supply specific bags (e.g., linked to registered collection depot, bag ID to track transaction) for customers to collect and return eligible containers. Bag-Drop Facilities will also be provided at mobile and/or pop-up return facilities such as at events or service provisions for universities with unmanned mobile or pop-up facilities restricted to electronic funds transfer, or transfer of scheme credits to loyalty schemes or other options.

Automatic container return facilities will include Reverse Vending Machines (RVMs) and Return-to-Retail. RVMs will be located in areas connected to customer convenience such as public transport facilities, education establishments, retail premises, Marae and Resource Recovery Centres and barbecue areas. RVMs may be focussed on donations only if they are located in areas such as bus/train/ferry stations, council main offices and zoos. Containers will be accepted based on, for example, barcode scanning, materials or shapes and scheme logo and the NZ CRS will also give consideration whether material compression will occur at selected container return facilities.

In relation to Return-to-Retail, acknowledging the feedback received from the SDWG and there being no global precedence of a voluntary return-to-retail underpinned by a mandatory approach, the NZ CRS return-to-retail has included a voluntary approach only. Retail stores over a certain size (xsqm) may be provided with the opportunity to propose how they will voluntarily offer a container return facility option to customers with retailers provided a timeline for when their proposals are expected to be approved by central government (presumably the Manatū Mō Te Taiao - Ministry for the Environment) and/or the scheme Managing Agency. Proposals would need to comply with certain predetermined criteria, for example, consumer convenience, accessibility, capacity.

Container return facilities are to take as little as two (2) streams of material (e.g., glass and other) followed by (if required) additional sorting technology at the container return facility or at another scheme location (e.g., scheme Material Consolidation Facility) that separates these materials into respective product/material types. A maximum container return amount will have to be considered for Manual Depots, Automated Depots and Return to Retail, with an emphasis on striking a balance between container return efficiency and impact on existing business activities. Site by site consideration might be required for Return to Retail to ensure that retail activities are not unduly disrupted by container return activities.

Container return facilities are to maintain records of eligible containers counted, refunds issued and/or undertake regular audits of collected materials to ensure scheme transparency. The reporting of key scheme performance data is to be established by the Managing Agency, in addition to appropriate fraud mitigation processes and procedures to manage and track the flow of eligible containers through the scheme.

Further, as noted above, the NZ CRS Managing Agency may approve compaction and/or baling of scheme material at some container return facilities where it is demonstrated that these facilities would contribute to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. The optimised compaction ratio that enables the scheme MCF to re-count and verify eligible scheme containers is to be determined by the Managing Agency. The Managing Agency will also establish a scheme baling and audit process based on robust standards and procedures. The baling process will be standardised across the scheme so that the same baling process (i.e., weight and size of bale) is used at the container return facility and the scheme MCF.

The NZ CRS Managing Agency will determine and set an appropriate handling fee and will also give effect to the integration of a separate financial accounting system and Information and Communications Technology (ICT) platform to manage scheme costs. Additionally, any revenue generated by the sale of eligible scheme material is to be passed on via the Advanced Material Recycling Fee to beverage producers to reflect the choice of container materials used. Where scheme materials are readily recyclable the AMRF may result in reducing the scheme costs for that material and vice versa for

materials that are challenging to recycle. The AMRF is a calculation based on the net position of resale value of the material offset against the transportation cost to get it to the end market.

## The Retailer

### The Aotearoa New Zealand Context

In the survey undertaken by ConsumerNZ, 70% of respondents noted that supermarkets would provide the most convenient place to return scheme eligible containers. Noting that the research suggests high-performing schemes are associated with a mandatory return-to-retail option, the NZ CRS Project Team had originally proposed a voluntary return-to-retail underpinned by a mandatory approach. However, feedback received from the SDWG noted a lack of support for this option and instead preferred a voluntary return-to-retail approach. Acknowledging the feedback received from the SDWG and there being no global precedence of a voluntary return-to-retail underpinned by a mandatory approach, the NZ CRS will include a voluntary return-to-retail option only.

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*The NZ CRS will include a voluntary return-to-retail option only.*

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### Key Findings

The outcomes of the research showed that retailers have an important role in the implementation and ongoing development of global container return schemes by providing the consumer with both the point of access for the sale of eligible containers and at times for the provision of container return facilities (e.g., return to retail, carpark RVMs). In this regard, retailers along with other scheme participants such as producers and consumers have a significant role to play in kaitiakitanga whakanaonga - product stewardship by helping to develop greater focus on waste and environmental sustainability through design, production and consumer consumption decisions.

When comparing manual and automatic container return systems, retailers are reported to prefer the incorporation of appropriately sized RVMs into the store front and/or entrance way to provide their customers with a convenient way to return eligible containers whilst undertaking their shopping. Manual collections and manual cash refunds were considered an inconvenient form of payment and were noted by retailers to slow down customer service. RVMs, in comparison, were perceived as beneficial as they provide refunds in the form of vouchers or cash and encourage customers to enter the retail store and purchase new goods. Further, across the global container return schemes a transitional period has often been established to allow retailers time to make the appropriate changes to product lines, and/or, change over in product pricing, prior to the end of the transitional period.

The costs incurred by retailers due to the operation of the schemes differ based on the designs of the schemes. Retailers can pass increased costs from beverage suppliers onto consumers by adding to the total cost of the beverages. In New South Wales, retailers were reluctant to dramatically increase the prices of their products in case it led to a change in customer purchasing habits, affecting not only the sales of beverages covered by the scheme, but also other products purchased at the same time. In Queensland, it was found that the price increases for alcoholic and non-alcoholic beverages were similar for small and large retailers and similar for Brisbane and regional Queensland. In Europe, costs on retailers are often subsidised through financial support from government or the Managing Agency. For example, in Denmark, financial support in the form of a handling allowance or subsidy is provided.

As retailers provide the direct engagement points at which consumers purchase eligible scheme containers, retailers have a large role to play in providing scheme awareness to the general public. To ensure customer engagement is accurate, informed and consistent, established and coordinated communication with the Managing Agency is required and it is important that retailers provide the correct information to consumers when asked about the scheme (e.g. Te Reo Māori, multi-lingual options). To support the provision of clear information, most scheme websites will either have online information that's relevant to retailers or will provide the contact details that retailers can use for information on the scheme.



## Component(s) to be Included in the New Zealand Container Return Scheme Design

Taking into account the key findings and feedback from the SDWG, the Project Team are of the view that return-to-retail will be included through voluntary participation across Aotearoa New Zealand. Further, the NZ CRS Managing Agency is to ensure the arrangements with retailers represents a win-win outcome, which may include providing retail stores over a certain size (xsqm) with the chance to propose how they will voluntarily offer a container return facility option to customers, and a timeline for their proposals to be approved by central government (presumably the Manatū Mō Te Taiao - Ministry for the Environment) and/or the scheme Managing Agency. Proposals would need to comply with certain predetermined criteria. Retailers with approved voluntary container return facility options will then be required to have these facilities implemented by scheme commencement.

The Managing Agency, in consultation with the retail sector, will establish a suitable transition period and deadline for compliance. Trans-Tasman arrangement specific to movement of eligible containers including other relevant international arrangements (i.e., import and export considerations) are also to be determined without comprising the outcomes of the NZ CRS (e.g., the NZ deposit amount).

Voluntary return-to-retail participation may include a Reverse Vending Machine (RVM) unit placed in the supermarket carpark to support consumer accessibility and convenience and/or other methods such as an RVM unit inbuilt inside the supermarket store footprint or a bag-drop facility. The Managing Agency will determine the arrangements for leasing and/or purchasing RVMs, and for provision of marketing material (e.g., marketing toolkit, Te Reo Māori and multi-lingual translations) to retailers.

Further, recognising the significant amount of eligible containers that are sold to and consumed by consumers at the hospitality sector (e.g., bars restaurants, hotels, cafés), the NZ CRS will incorporate this sector into the design with the Managing Agency responsible for establishing the specific scheme requirements for those businesses.

Specific return-to-retail contractual arrangements to be determined by the Managing Agency will include:

- Recognising deposit labels and eligible containers.
- Inspecting packaging and barcodes to ensure that they are intact.
- Refunding the correct deposit amount.
- Sorting the collected containers correctly.
- Reporting requirements on the empty containers that they collect and refund.
- Recording of accounting, drop offs and collections.
- Additional costs on retailers.
- Site logistic requirements.
- Modification requirements to the retailer.
- Impacts on health and safety.

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*The NZ CRS will incorporate the hospitality sector into the NZ CRS design with the Managing Agency responsible for establishing the specific scheme requirements for those businesses.*

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## The Consumer

### The Aotearoa New Zealand Context

The consumer is the most important element of the NZ CRS as the scheme is to be developed for the consumer. In a survey undertaken by ConsumerNZ in early 2020, 2,114 New Zealanders over the age of 18 were surveyed (53% female, 47% male) to gauge views on hangarua - recycling and the container return scheme. 78% were in favour of a scheme with 10% opposed and a further 12% undecided. 68% of those surveyed, earning below NZD\$25,000 per annum, were reported to support the scheme which is slightly lower than the average of 78% as noted above. This is an important consideration as the NZ CRS needs to provide a convenient and accessible service to all New Zealanders. Further, 72% reported that they were very likely to use the scheme, with only 8% unlikely to do so.

Survey respondents also provided responses to what the minimum deposit amount should be with 58% considering an amount up to NZD20-cents to be sufficient. This included 13% of respondents who noted they would do it anyway, 31% between a NZD5-cent and NZD10-cent deposit and 27% between NZD15-cent and NZD20-cent deposit. Interestingly, the ConsumerNZ survey noted there were no differences in responses by annual household income.

The ConsumerNZ survey also asked the respondents how they would like to receive the deposit. 40% of respondents supported cash, 21% direct payment to a bank account, 16% voucher, 6% charity and the remaining 17% reporting other methods. Additionally, the following key design factors were reported to ensure the NZ CRS works well for the consumer:

- Convenient drop-off locations (79%);
- Clarity regarding what containers are included in the scheme (67%);
- Inclusion of a wide range of beverage containers (64%);
- Easy to understand scheme information (62%);
- Deposit amount needs to be high enough to make it worthwhile for consumers to use the scheme (62%); and
- Other matters for consideration (2%).

ConsumerNZ carried out a further survey in June 2020 of 1,516 New Zealanders aged 18. Consumers in the second survey were provided with information explaining that the NZ CRS would mean paying a refundable deposit fee (approximately NZD20-cents) at the point of purchase together with a non-refundable scheme administration fee (approximately NZD5-cents to NZD7-cents). Providing information about the scheme costs did not lead to a significant drop in support for a NZ CRS with the majority of respondents remaining in favour of a scheme and with no significant differences in responses based on household income. With regards to transparency to consumers of scheme costs on, for example, shopping receipts, 69% believed it was somewhat important or very important for the refundable deposit fee to be shown on shopping receipts and 62% believed it was somewhat important or very important for the non-refundable scheme administration fee to also be shown on shopping receipts.

## Key Findings

Working towards a high return rate of containers inherently benefits consumers by ensuring that they are encouraged to return their containers. The research found that while all consumers automatically participated in container return schemes as purchasers of single-use beverage products, the returning of eligible scheme containers and refunding of deposits is dependent on several key factors.

A key factor that drives behaviour change is the financial incentive. As the receivers of the deposit refunds from eligible containers, consumers can experience economic benefits that make the collection and return of containers worthwhile. It was found that as the deposit refund value increased, so did the incentive. If the deposit refund amounts for eligible containers are too low, consumers may not be incentivised enough to return their containers. Another key factor is the convenience and accessibility, as part of the consumer experience and engagement, which also helps ensure that costs on consumers are minimised. Employment opportunities are also a key factor, with consumers receiving an income source from the operation of container return facilities. In addition to direct scheme engagement, the benefits provided by a container return scheme to consumers has wider reach including community pride through the reduction of litter and an increase in employment opportunities for community groups.

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*It is recommended that each Aotearoa New Zealand region will have a dedicated MCF. There may be a requirement for more than one MCF in a region where it is demonstrated that an additional MCF(s) would lead to improved scheme efficiencies such as transport savings without compromising increased risk of fraud*

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Lastly, scheme communication is another key factor to engagement with consumers. The roles and responsibilities of consumers are often communicated to consumers in the scheme awareness campaigns such as online resources, education materials and advertisements. Consumer questions and complaints are often managed by the Managing Agency or the government department responsible for overlooking the scheme. It is important to ensure that consumers have an understanding of the scheme, its kaupapa - purpose, its benefits to them, and where and how they can return their containers. A consumer education campaign should be considered to ensure that consumers understand the changes. Communication of information should also meet a variety of accessibility needs including language translations (in Aotearoa, Te Reo Māori) and cultural considerations.

Further, to gauge New Zealanders views on hangarua - recycling, support for a container return scheme and transparency of scheme costs, surveys were undertaken by ConsumerNZ in February, March and June 2020. The results of the surveys found that NZ CRS design that provided for convenient drop-off facilities (e.g., supermarkets and collection depots), provision of clear scheme information, inclusion of a wide range of beverage container material types (i.e., plastic, glass, metal), a range of options to receive the deposit (e.g., cash, direct to bank account, voucher and donation) and a deposit amount that was high enough to encourage consumer participation in the scheme (i.e., up to NZD20-cents) were the most important factors to support the success of a NZ CRS. Additionally, the survey results indicated significant consumer support for scheme costs to be transparent to the consumer through, for example, itemisation of scheme costs on shopping receipts.

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*Sufficient container return facilities are to be located in proximity to locations such as supermarkets, petrol stations, and access points, and enable customers to return their containers in a secure and efficient manner, with minimal wait and transaction times.*

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### **Component(s) to be Included in the New Zealand Container Return Scheme Design**

Taking into account the key findings and feedback from the SDWG, the Project Team are of the view that the design of a bespoke NZ CRS needs to be focussed on consumer convenience, engagement and accessibility.

Sufficient container return facilities are to be located in proximity to locations such as supermarkets, petrol stations, and access points, and enable customers to return their containers in a secure and efficient manner, with minimal wait and transaction times. Container return facilities are to operate after-hours and weekends (noting opening times may be influenced by region specific consenting requirements) and provide for safe access to a wide range of customers.

A flat-rate minimum deposit value will be applied to all eligible containers to ensure consumer engagement and make it worth their while and drive the desired behaviour change. Container refunds are to include cash, electronic funds transfer, supermarket voucher (including, for example, a 2-year expiration date), donation, other (e.g., scheme credit system, loyalty card, gift card). The scheme Managing Agency is to have flexibility to expand the range of refund options supported by robust information (e.g., consumer surveys) and in consultation with the scheme Governance Board and the government department responsible with scheme oversight.

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*Container refunds are to include cash, electronic funds transfer, supermarket voucher (including, for example, a 2-year expiration date), donation, other (e.g., scheme credit system, loyalty card, gift card).*

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Clear and accessible information is to be provided to ensure consumers have a good understanding of the scheme, its kaupapa - purpose, its benefits to them, and where and how they can return eligible container. Employment, education (e.g., school certificates, pre-school engagement) and life skill (e.g., budgeting skills) opportunities are also to be enabled through the container return scheme (e.g., opportunities provided for at manual container return facilities).

## Material Processing Facilities

### The Aotearoa New Zealand Context

In the context of the NZ CRS, the Material Consolidation Facility (MCF) will only receive and process eligible scheme containers whereas the Material Recovery Facility (MRF) will remain a sorting facility that extracts eligible scheme material from recyclables.

To ensure the most cost effective and efficient NZ CRS is established, recognition of the expected eligible container count per region and the need to minimise transportation movements is required in order to determine the number of MCFs needed to deliver such a service to Aotearoa New Zealand. An assessment was undertaken to show the eligible scheme container count overlaid with the sixteen (16) New Zealand territorial regions. Clearly, the number of eligible scheme containers is highest in the Auckland region followed by the Waikato, Te Whanganui-a-Tara - Wellington and Waitaha – Canterbury regions. Looking at Te Ika a Maui - the North Island, it is clear that the higher population base is also reflective of the expected container count across the wider regions compared with Te Wai Pounamu - the South Island where the population is sparse and container count lower in comparison. However, it is also noted that seasonal variation and visitor numbers will also have a disproportionate impact on container counts in some of Aotearoa New Zealand's more rural regions, for example Queenstown Lakes and Northland.

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*Clear and accessible information is to be provided to ensure consumers have a good understanding of the scheme, its kaupapa - purpose, its benefits to them, and where and how they can return eligible container.*

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It is recommended that each Aotearoa New Zealand region will have a dedicated MCF. There may be a requirement for more than one (1) MCF in a region where it is demonstrated that an additional MCF(s) would lead to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. It is envisaged that establishment of the scheme MCF network would include existing Territorial Local Authority (TLA) owned/contracted resource recovery infrastructure (e.g., resource recovery centres) which could be upgraded/converted to become an expansion of the NZ CRS MCF network. Where appropriate and practicable, the Managing Agency will give effect to prioritising the use of existing infrastructure in Aotearoa New Zealand to reduce scheme costs and maximise the opportunity for whakamahi anō - reuse.

For the purpose of the NZ CRS and to ensure the scheme compliments existing kerbside recycling collection services, the MRF facility will continue to receive kerbside recyclables which may also include eligible scheme material. The MRF will continue to provide a vital pathway by which eligible scheme containers can be recovered from the kerbside recycling stream, but will only be eligible to receive a deposit or handling fee refund (noting this will be under a revenue sharing arrangement with the local council) if the scheme containers meet the required eligibility criteria.

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*For the purpose of the NZ CRS and to ensure the scheme compliments existing kerbside recycling collection services, the MRF facility will continue to receive kerbside recyclables which may also include eligible scheme material.*

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### Key Findings

The outcomes of the research showed that eligible scheme containers can be returned by the consumer via several pathways which are associated with different material processing facilities. Briefly, eligible scheme containers are commonly received for processing at:

#### 1. Material Consolidation Facility (MCF) Pathway

- Consumer returns eligible scheme material to a container return facility for the appropriate refund. Scheme material is sorted, verified and processed by one or more centralised scheme Material Consolidation Facility (MCFs).

## 2. Material Recovery Facility (MRF) Pathway

- Consumer disposes of eligible scheme material into the kerbside recycling service and does not receive a refund. Scheme material is sorted, verified and processed by an existing Material Recovery Facility (MRF).

## 3. General Refuse Processing Facility Pathway

- Consumer disposes eligible scheme material into the kerbside refuse service and does not receive a refund. Scheme material is commonly disposed of to landfill unless processes and procedures are in place at, for example, waste transfer stations to recover scheme eligible material.

## 4. Disposal to the Environment Pathway

- Consumer disposes eligible scheme material to the taiao - environment (i.e., litter) and does not receive the refund.

Whilst the arrangements of the Material Processing Facilities within a scheme differs across many global container return schemes, fundamentally, the scheme MCF provides the central point at which scheme collected eligible scheme containers are counted, verified and sorted ready for transport to material re-processors and/or direct to end-markets. Eligible scheme containers received at MCFs from container return facilities are either sorted into the number of categories as specified by the respective scheme (e.g., colour graded PET and glass, HDPE, LPB) or received as comingled containers for further sorting and verification. Whilst the majority of scheme materials (e.g., PET, HDPE, LPB) are processed prior to being transported to the re-processor, other materials such as glass are transported directly to, for example, a glass beneficiation facility.

In the case of MRFs, arrangements are put in place to manage eligible scheme containers collected via local council kerbside recycling collections and eligible containers entering the general refuse via waste transfer stations. To be eligible for a deposit or handling fee refund, the recovered eligible containers must meet the scheme container eligibility criteria. A contractual revenue sharing arrangement is commonly established between the MRF and the local council, with the revenue shared acknowledging the contribution and services provided by the respective provider. Further, processes are often established to audit scheme eligible glass container return rates collected via kerbside recycling collections to support appropriate MRF glass material handling fee claims.

Accurate data verification and transparency of data are commonly put in place between the container return facility, scheme material processing facilities and the Managing Agency to ensure accurate and traceable data. The method for verifying eligible containers is often either via direct count or using a weight-based approach, although many global schemes employ a direct count verification method. The ability of a scheme material processing facilities to undertake automated actual counts is influenced by the container count method (e.g., barcode scanning, shape verification) which in turn influences the form eligible containers are received (e.g., 'whole' containers with scheme ID intact). Additionally, scheme designs often determine the number of sorts required for processing eligible containers and consequently the alignment required between the scheme material processing facilities (i.e., MCF, MRF, general refuse processing facilities) and the container return facilities (e.g., manual collection depots).

Compaction of material at the container return facilities can be implemented to reduce depot footprints and reduce transportation costs and is often aligned with the scheme MCF container counting, verification methodology and scheme audit and fraud minimisation requirements. Where it is approved by the NZ CRS Managing Agency, compaction will occur at or as close to the point of collection as possible to achieve transport efficiencies and only occur after the containers have been verified and counted.

Transportation of collected eligible containers from the container return facility to the MCF and onwards (e.g., re-processor) presents a challenge as they are bulky and lightweight and commonly require significant compaction to improve transport efficiency. Several schemes have integrated maximising loads of materials achieved through balancing baling and compaction at container return

facilities with fraud control measures, through to utilising third party back-haul arrangements for transportation of materials from the material processing facility to the re-processor and continually investigating options for improved transport efficiency. Scheme objectives, including the reduction in scheme transport related greenhouse gas emissions, have been reported to incentivise the scheme Managing Agency to robustly assess and implement mechanisms to give effect to this objective.

Clear communication and expectations of scheme material processing facilities roles and responsibilities is commonly managed by central government and the Managing Agency with most official scheme websites having online information that is relevant to scheme material processing facilities. Where the scheme MCF is not part of the Managing Agency, clear contractual arrangements are put in place between the Managing Agency and the MCF, including the ability for the Managing Agency to undertake random audits of MCF activities. Further, the Managing Agency commonly establishes dispute resolution processes and procedures to enable scheme material processing facilities to raise issues and have disputes addressed.

Material processing facility financial accountability systems and processes are also critical scheme design components as these provide the foundation on which the Managing Agency can audit the quantity of eligible containers returned, track container return rates and value the deposits repaid to consumers. Contingency infrastructure and/or arrangements are also often put in place to ensure scheme material processing facilities can continue processing eligible scheme containers in the event of capacity issues and/or infrastructure down-time.

### Component(s) to be Included in the New Zealand Container Return Scheme Design

Taking into account the key findings and feedback from the SDWG, the Project Team are of the view that the scheme MCF is to be incorporated into the NZ CRS design as an integral component responsible for the central repository and on-ward transportation hub to end-markets and/or material re-processors.

It is recommended that each region in Aotearoa New Zealand (i.e., 16 regions) will have a dedicated MCF. There may be a requirement for more than one (1) MCF in a region where it is demonstrated that an additional MCF(s) would lead to improved scheme efficiencies without compromising increased risk of fraud. The Managing Agency may give effect to prioritising the use of existing infrastructure in Aotearoa New Zealand to reduce scheme costs and maximise the opportunity for whakamahi anō – reuse.

The Managing Agency will contract the services of the Material Processing Facility (e.g., Material Consolidation Facility), whether it chooses to directly own and operate this or contract this function out to a third party with all scheme material sold to markets owned by the Managing Agency.

The establishment of collection service contracts and/or agreements will also be managed by the Managing Agency. For clarity, where the material processing facility is based on utilising an existing MRF then the contractual arrangement would reflect the appropriate delineation of that site to ensure separation of existing sorting activities and materials from the NZ CRS.

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*The Managing Agency will contract the services of the Material Processing Facility (e.g., Material Consolidation Facility), whether it chooses to directly own and operate this or contract this function out to a third party with all scheme material sold to markets owned by the Managing Agency.*

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Direct and/or weight-based container counting methodology will be incorporated at scheme material processing facilities with regular auditing undertaken to ensure payments made to collection depots reflects the weight to count ratio. The Managing Agency will establish the criteria to determine weight-based assessment and may also approve **compaction** and/or **baling** of scheme material at some container return facilities where this would contribute to improved scheme efficiencies without compromising increased risk of fraud. The Managing Agency will establish a scheme baling and audit process based on robust standards and procedures that the container return facility must contractually

abide and will be standardised across the scheme. The Managing Agency will also determine the optimised compaction ratio that enables the scheme MCF to re-count and verify eligible scheme containers.

The NZ CRS Managing Agency will establish appropriate fraud mitigation processes and procedures, and clear and consistent collection, quality control and auditing processes for all scheme participants. Auditing processes will include auditing of scheme eligible glass container return rates collected via kerbside recycling collections to support appropriate MRF glass material handling fee claims. Further, a scheme MCF, MRF and General Refuse Processing Facility protocol, including all auditing requirements and protocol review period is to be determined by the NZ CRS Managing Agency.

The NZ CRS Managing Agency will set the requirements for refunds associated with eligible containers recovered from kerbside collected general refuse via waste transfer stations (i.e., those facilities that do not allow public refuse drop-off). The Managing Agency will also support the establishment of a revenue sharing arrangement (deposit or handling fee amount, including a transitional period) between the MCF and the local authority will be underpinned by clear guidelines (e.g., the default position could have the deposit shared 50/50 between the two parties making sure no party is disadvantaged nor gains a windfall from the NZ CRS with any surplus returned to the ratepayer) between the local council and the MRF for eligible containers collected via kerbside recycling collections. It is recommended each Territorial Local Authority and MRF operator undertake their own negotiations (excluding the involvement of the Managing Agency) and reach agreement on revenue sharing as this recognises the different contractual arrangements that exist across Aotearoa New Zealand. It is also recommended that local authorities use the opportunity of recognising revenue from containers in the recycling bin to offset recycling collection costs incurred by ratepayers (e.g., realising savings through tendering, including, for example, greater collections per unit truck and recognition of these savings as a variable on customer rates). The reason for this is to incentivise the MRF operator to make all appropriate efforts to separate out eligible and redeem containers (in accordance with the scheme container acceptance criteria). While it is recommended each Territorial Local Authority and MRF operator reach agreement on revenue sharing, the agreement is to be established and set at a level that will support kerbside recycling and incentivise the MRF to fund processing and maximise recovery of eligible containers.

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*Ensuring end-markets are available to accept the collected scheme material, the NZ CRS Managing Agency will promote a holistic end-to-end solution as well as the outcomes of the pūnaha whakarōpū para - waste hierarchy which may require taking ownership and accountability of the end fate of scheme material.*

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## The Material Re-Processor

### The Aotearoa New Zealand Context

The role and responsibility of the Material Re-Processor in the functioning of a container return scheme is to receive scheme material from the scheme MCF then prepare these materials suitable for manufacture back into containers and/or other products. Some products such as single-use beverage pouches and containers wrapped in complete sleeves, ring-pull lids and bottle caps may present sorting infrastructure challenges to separate the component parts. However, these materials may also present opportunities, encouraged through Kaitiakitanga Whakanaonga - Product Stewardship, to create solutions for re-use and/or hangarua - recycling.

Further, ensuring end-markets are available to accept the collected scheme material, the NZ CRS Managing Agency will promote a holistic end-to-end solution as well as the outcomes of the pūnaha whakarōpū para - waste hierarchy which may require taking ownership and accountability of the end fate of scheme material. The NZ CRS Managing Agency as owner of the recovered scheme material will ensure that all recovered scheme material is beneficially reused.

The NZ CRS must also give consideration to the available onshore material re-processing infrastructure in order to determine whether additional infrastructure is required to support the NZ CRS. This will be important when seeking to support onshore container manufacturers as this is interconnected with the ability of onshore re-processors to provide material that meets the required specifications. The NZ CRS container return facility will also have a significant role in ensuring the collected material is separated according to the NZ CRS requirements. As such, the material re-processor cannot be considered in isolation of the wider scheme participants, particularly, the container return facility and the Material Consolidation Facility as each have a significant role and responsibility in ensuring recovered scheme material meets the requirements of the respective end-market.

## Key Findings

The research has found that material re-processors provide a key service to container return schemes by providing end-markets for the collected scheme eligible material. Consequently, the material re-processor may require from either the Managing Agency or MCF specific material acceptance criteria which may include factors such as contamination levels to support re-processing activities and the production of end products. Hence the relationship of the material re-processor may influence how scheme eligible material is collected and sorted so as to meet re-processor requirements (captured in the contractual obligations between the parties) and to ensure the highest quality material is available to the commodity markets.

Where the Managing Agency is involved in the fate of scheme material, the Managing Agency has greater ability to track and control the end fate of the eligible scheme material with contracted material re-processors. Material re-processors may be procured through a competitive tendering process ensuring eligible scheme material is recycled. They must generally meet strict criteria and material specifications (e.g., quality of recycled PET flakes, quality of recycled aluminium) and impose this requirement upon the MCF/Managing Agency. The Managing Agency may undertake an assessment of the material re-processors hangarua - recycling performance, including an assessment of the organisation's certifications and authorisations, and may undertake regular inspections to ensure that little material collected through the scheme is wasted. The Managing Agency may decide to utilise back-haul transportation relationships where possible to reduce the carbon dioxide emissions from transporting scheme beverage containers from the MCF to manufacturers, for example, glass.

Where the Managing Agency is not involved in the fate of scheme material, the Managing Agency may have limited visibility on the end fate of the collected scheme material. In this situation, the material re-processor sells the product to commodity markets and the Managing Agency generally has limited ability to control the end fate of the scheme material (i.e., ensuring the material is recycled).

As with a MCF, the role of the material re-processor in a container return scheme differs depending on the scheme design including whether the scheme seeks to control and/or influence the connectedness of a scheme with a closed loop material cycle and *ōhanga āmiomio* - circular economy principles.

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*The Managing Agency will control and/or have full transparency of the end fate of scheme materials via, for example, contractual relationships or competitive tendering processes with re-processors.*

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## Component(s) to be Included in the New Zealand Container Return Scheme Design

Taking into account the key findings and feedback from the SDWG, the Project Team are of the view the Managing Agency is the owner of the recovered scheme material. This will enable the Managing Agency to ensure that all recovered scheme material is beneficially reused through measures such as legislative drivers, establishment of long-term contractual arrangements, encouraging the use of scheme recycled material for the production of containers, ensuring scheme material can have adequate quality to be used again for food packaging and undertaking regular inspections of approved scheme re-processors ensuring that minimal scheme material is wasted. The Managing Agency will control and/or have full transparency of the end fate of scheme materials via, for example, contractual relationships or competitive tendering processes with re-processors.



The Managing Agency is to undertake regular audits and inspections of the material re-processor to ensure minimal scheme material is wasted and scheme material is recycled in accordance with contractual agreements. Further, the Managing Agency is to establish the role of the material re-processor and influence on scheme collection and sorting methodologies, and the contractual arrangements to include material end fate and recyclability requirements of scheme material.

The refillables market is to be promoted by the Managing Agency. This is in alignment with the three (3) key project outcomes for the NZ CRS. Options for promoting the refillables market include funding and promoting the benefit and awareness of refillables as a preferred choice to New Zealanders, working with existing Aotearoa New Zealand refillable schemes to identify and remove barriers, investing in infrastructure by addressing barriers such as the return, re-washing and refilling of bottles, ensuring that the method of return by customers is convenient and accessible, establishing NZ CRS container return facilities that can accept, sort and store for transportation both eligible single-use and reusable beverage containers, facilitating the uptake of reusables through the integration of strategic directives embedded within the NZ CRS scheme performance indicators, and securing the funding to achieve the above from the scheme (e.g., unredeemed deposits and/or levy on single-use containers).

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*Refillables should be excluded from the NZ CRS and established as a stand-alone scheme. However, the SDWG acknowledged that there may be opportunities for the two (2) schemes to work alongside one another through measures such as the NZ CRS financially supporting the establishment of refillable infrastructure and utilising aspects of the NZ CRS container return facility infrastructure for the collection of refillables.*

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## The Container Manufacturer

### The Aotearoa New Zealand Context

The container manufacturer in the context of the NZ CRS is defined as the manufacturer of eligible packaging and containers. A clear transition period is required to assist container manufacturers establish and implement the appropriate processes and procedures to ensure containers are compliant with any NZ CRS requirements. The specific scheme requirements are expected to be managed by the purchaser of the containers, in this case the beverage producer through contractual arrangements between both parties. However, the NZ CRS Managing Agency may also have specific contractual requirements in place with the beverage producer which may involve auditing of the container manufacturer to ensure compliance with scheme requirements.

Feedback received from the SDWG noted that refillables should be excluded from the NZ CRS and established as a stand-alone scheme. However, the SDWG acknowledged that there may be opportunities for the two (2) schemes to work alongside one another through measures such as the NZ CRS financially supporting the establishment of refillable infrastructure and utilising aspects of the NZ CRS container return facility infrastructure for the collection of refillables.

### Key Findings

Each scheme refers to container manufacturers and beverage producers differently, often identifying them as manufacturers, suppliers, brand owners or bottlers. The outcomes of the research showed that the role of the container manufacturer in a container return scheme is small compared to the beverage producer who holds most of the responsibility for ensuring eligible containers are compliant.

In many schemes, eligible scheme containers are registered by the beverage producer and approved by the scheme Managing Agency or regulator before being sold in the market. As such, the beverage producer communicates relevant scheme requirements to the container manufacturer. Container manufacturers are commonly only responsible for supplying eligible empty packaging to beverage producers and for supporting the closed loop of the scheme by, for example, incorporating post-consumer recycled materials in their manufacturing, where possible. Some container return schemes influence the container manufacturer to use recycled scheme material in the production of new containers thereby contributing towards a 'can to can' or 'bottle to bottle' future. This is usually the

contracted responsibility of beverage producers who would pass on that requirement to their container manufacturers.

A beneficial outcome of schemes is that they generate a local stream of clean recycled materials for container manufacturers to use in their new containers, enabling onshore *ōhanga āmiomio* - circular economy outcomes. Less energy is required to turn collected containers into materials that can be used in the manufacturing of new containers, which also leads to a decrease in manufacturing emissions into Papatūānuku such as air and water emissions. In Sweden, purchasing feedstock cost and logistical savings were reported as container manufacturers were provided with a continuous stream of materials to produce new containers.

The design of the scheme influences the degree to which the container manufacturer is directly impacted by the scheme. Container manufacturers are impacted by the manufacturing changes that their beverage producers might request in order to be compliant with the scheme, such as removal of ring-pull lids. Consequently, a transition period may assist container manufacturers to make the necessary change to containers in order to comply with specific regulations.

### **Component(s) to be Included in the New Zealand Container Return Scheme Design**

Taking into account the key findings and feedback from the SDWG, the Project Team are of the view that regulations are to be developed to stipulate technical specifications for containers manufactured or imported into Aotearoa New Zealand and to give effect to maximising *ōhanga āmiomio* - circular economy outcomes and principles of *kaitiakitanga whakanaonga* - product stewardship.

The Managing Agency will require as part of contractual obligations and/or key contractual performance indicators with beverage producers, that contractual negotiations support the provision of post-consumer recycled scheme material to local container manufacturers, that container manufacturers use post-consumer recycled scheme material in the manufacturing of new containers, and that the use of post-consumer recycled scheme material in container manufacture is exempted if containers can be reused or refilled.

Further, the Managing Agency will provide clear information to set out any specific labelling requirements to help ensure container manufacturers are compliant, including an online portal to access training material, courses and specific scheme information. A transition period will also be implemented by the NZ CRS Managing Agency to provide container manufacturers with enough time to make the necessary changes to their containers to comply with regulations.

Acknowledging SDWG feedback, refillables will be excluded from the NZ CRS, however the NZ CRS design will support the promotion of the uptake of refillables and where possible encourage new opportunities for refilling. This may include, but is not be limited to investment in, or funding of, infrastructure by addressing barriers such as the return, re-washing and refilling of bottles, and ensuring that the method of return by customers is convenient and accessible. This is in alignment with the three (3) key project outcomes of NZ CRS.

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*A beneficial outcome of container return schemes is that they generate a local stream of clean recycled materials for container manufacturers to use in their new containers, enabling onshore *ōhanga āmiomio* - circular economy outcomes*

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## **The Beverage Producer**

### **The Aotearoa New Zealand Context**

The beverage producer in the NZ CRS is to ensure that eligible beverage containers are supplied to the market, ensure that the eligible containers are clearly marked and identified as part of the scheme, and pay for the costs related to the supply of eligible container materials as part of the scheme. Further, acknowledging the export of beverage products, Aotearoa New Zealand beverage producers that

provide products to multiple global jurisdictions will be exempt from paying the NZ CRS scheme related fees.

Additionally, notwithstanding the outcomes of the research and acknowledging the feedback received from the SDWG, on balance the Project Team are of the view that the NZ CRS design will include its own unique scheme logo which may also incorporate a scheme ID, QR code or other form of scheme identification which will be applied to all scheme registered beverage containers.

Based on SDWG feedback and the outcomes of the global research, the following non-exhaustive additional design components will also apply to the Aotearoa New Zealand beverage producer:

- Container conditions of acceptance;
- Legislated labelling requirements including verification requirements;
- Registration of eligible scheme containers;
- Implementation of a transition period;
- Inclusion of contractual performance indicators to support the provision of post-consumer recycled scheme material in the manufacturing of new beverage containers;
- Use of post-consumer recycled scheme material in container manufacture exempted if containers can be reused or refilled; and
- Provision of monthly sales data to track eligible scheme containers placed on to the market versus those returned to the scheme.

A detailed legal assessment will be required during the NZ CRS implementation stage to ensure all legal components have been accounted for in the bespoke NZ CRS legislative instrument with specific reference to the beverage producer.

## Key Findings

The outcomes of the research showed that beverage producers have a legal obligation to participate and fund the scheme and ensure that eligible containers supplied to the market are clearly marked and identified as part of the scheme. In some schemes, this role is identified by different terms such as a first supplier in the New South Wales container return scheme.

Beverage producers typically face the financial responsibility of funding container return schemes with some or all of these costs being passed through to the consumer at the point of sale. Beverage producers may also be responsible for managing and operating the scheme which may either require a deposit to be paid on all eligible containers regardless whether the containers are returned or not, or a deposit paid only on those eligible containers returned. The way in which this is achieved differs depending on which scheme model is implemented. In addition to the deposit fee paid per container, beverage producers can be required to pay other scheme costs such as an additional material fee on products that are not readily recycled, administration fees and scheme joining fees to the Managing Agency with funds used to finance the scheme. If unredeemed/unclaimed deposits are generated due to the scheme design, specific scheme and/or legislated requirements are established to manage the funds. Schemes where beverage producers sell eligible containers outside of the state/territory/country are generally eligible for a refund of scheme deposits with appropriate measures in place to manage over-claiming.

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*The NZ CRS design will include its own unique scheme logo which may also incorporate a scheme ID, QR code or other form of scheme identification which will be applied to all scheme registered beverage containers.*

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Additionally, beverage producers are economically impacted as schemes require them to change their container designs with beverage producers, at times, required to undertake modifications to their factories, systems and operations when changes are mandated. Another issue generally faced by beverage producers during scheme initiation is the logistical requirement to ensure contracts and organisational management is in place. Some global schemes offer interest free loans to the scheme in

the design and initiation stages to support freezing of fees in the first year of operation to keep costs down for producers and consumers. Further, a transition period is also often implemented to provide producers with enough time to make the necessary changes to their containers to comply with regulations.

In most global container return schemes, beverage producers are managed and regulated by the scheme Managing Agency, and it is the legal obligation of the scheme Managing Agency to ensure that producers are registered and compliant. Beverage producers in general must register containers with the scheme, with containers required to be approved by the scheme Managing Agency or the regulator before being able to be supplied to the market. Most global container return schemes require producers to ensure that eligible scheme containers contain labelling requirements, for example, the scheme refund marking, the scheme logo, the barcode and the deposit/refund amount. Along with clear conditions for acceptance, these are usually legislated or specified in regulations by the Managing Agency. Across many container return schemes, the Managing Agency commonly provides beverage producers with information and tools to ensure clarity of roles and responsibilities, including registration of containers.

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*The NZ CRS Project Team on balance consider the refund model to provide the consumer with a scheme that is more cost effective and efficient but that a refund model must be linked to strong scheme Governance and central government oversight.*

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However, some container return schemes have been found to create commercial tensions between beverage producers particularly where discrepancies between specific eligible and ineligible beverage types were included. There was evidence found in Sweden to suggest that some beverage producers were changing their product material from PET to other plastics to avoid paying scheme costs.

The availability of a consistent supply of material via container return schemes may support beverage producers to increase the use of recycled feedstock in the production of new containers and support government *ōhanga āmiomio* - circular economy initiatives encouraging, where possible, a closed loop material system. The implementation of regulatory incentives may also be required to ensure beverage producers supply beverages in sustainable packaging and/or in packaging that is readily recycled.

### **Component(s) to be Included in the New Zealand Container Return Scheme Design**

Taking into account the key findings and feedback from the SDWG, the Project Team are of the view that the Managing Agency is to provide clear information to beverage producers setting out any specific labelling requirements. Clear conditions of acceptance are to be established and container labelling is to be legislated, including requirements for scheme verification such as a scheme logo, barcode and deposit amount. A transition period is to be implemented by the Managing Agency to give beverage producers enough time to make the necessary changes to their containers in order to comply with the regulations.

Beverage producers will be required to register all eligible beverage containers and provide the Managing Agency with monthly sales data to track scheme containers placed on to the market and those eligible scheme containers returned. Scheme costs and incentives to use post-consumer recycled scheme material in the manufacture of new containers will be determined by the Managing Agency with the Managing Agency to take all necessary steps and actions as required to ensure compliance with the scheme requirements.

Further, the NZ CRS Managing Agency will undertake regular reviews of beverage containers and materials by undertaking *huringa mataora* - life-cycle analyses of these in keeping with the economic, environmental, social and cultural outcomes of the NZ CRS design. Contractual obligations and/or key contractual performance indicators with beverage producers will support the provision of post-consumer recycled scheme material in the manufacturing of new beverage containers. However, the use of post-consumer recycled scheme material in container manufacture will be exempted if containers can be re-used or refilled. The Managing Agency will determine the number of times re-use and/or refill can occur to enact this exemption.

## Scheme Financials

### The Aotearoa New Zealand Context

There is growing recognition in Aotearoa New Zealand that the economy must transition from a linear economy to *ōhanga āmiomio* - circular economy with the New Zealand Government having established and enacted several key legislative documents that set the requirements for waste minimisation and management in addition to ratifying several international agreements. This is reinforced by Te Ao Māori, reflected in Tiriti o Waitangi principles, which similarly promotes responsible stewardship of the whenua, including valuing resources, and thereby respecting the mauri of Papatūānuku.

Additionally, scheme financials are considered an integral and critically important process underpinning the success of a scheme and the ability for scheme participants to effectively engage in the scheme.

### Key financial model outputs

The development of the NZ CRS financial model assisted was required to understand the cashflows (revenues and costs) of operating a NZ CRS and the financial impact on consumers, in addition to indicative estimates of other scheme impacts, such as net savings for kerbside recycling, and refuse collection, and landfill disposal costs.

The financial model included five (5) NZ CRS design scenarios, which were selected to illustrate the effects of scheme design choices:

1. 20-cent refund model;
2. 10-cent refund model;
3. 20-cent glass out refund model;
4. 30-cent refund model; and
5. 20-cent deposit model.

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*On balance the Project Team are of the view that a 10-cent deposit be adopted for the NZ CRS. However, the 10-cent deposit will be put in place for a period of no more than 3-years (36-months) to align with the first scheme review period.*

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Notwithstanding the outcomes of the research and feedback received from the SDWG, the NZ CRS Project Team on balance consider the refund model to provide the consumer with a scheme that is more cost effective and efficient but that a refund model must be linked to strong scheme Governance and central government oversight. The reasons for the refund model include, but are not limited to, providing a smoother transition of price at the consumer level as the scheme establishes. Further, if however, it was decided by the Government of the day that the NZ CRS be controlled and managed by the beverage industry, it is then recommended that a deposit model is adopted. This is to ensure that the beverage industry are held accountable to ensuring container return rates meet and where possible exceed scheme targets as set in the bespoke NZ CRS legislative instrument.

Further, notwithstanding the original recommendation of a deposit value of 20-cent, on balance the Project Team are of the view that a 10-cent deposit be adopted for the NZ CRS. However, the 10-cent deposit will be put in place for a period of no more than 3-years (36-months) to align with the first scheme review period with the deposit automatically increasing to 20-cents at year-5 (60-months) allowing for a 2-year (24-month) transition period if the 70%-year-3 (36-month) container return target is not met. If the return rate does not reach 80% within 4-years (48-months) the deposit level will automatically increase to 20-cents at year-6 (72-months) allowing for a 2-year (24-month) transition period if the 80%-year-4 (48-month) container return target is not met. The next deposit review will align with the 5-year (60-month) scheme review period with the deposit increasing to 20-cents if the 85%-year-5 (60-months) container return rate target is not met. Again, a 2-year (24-month) transition period will be provided for should this situation occur.

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*Beverage producers will be required to register all eligible beverage containers and provide the Managing Agency with monthly sales data to track scheme containers placed on to the market and those eligible scheme containers returned.*

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Thereafter, the deposit level will be reviewed every 5-years (60-months) to align with the regulated scheme review periods. The scheme review periods and the requirements for deposit level increases will be included in the bespoke NZ CRS legislative instrument. It is further recommended that no later than 9-months before the scheme commences a final review is undertaken by the regulatory authority to confirm the starting deposit rate of 10-cents per container is still appropriate.

Additionally, the key outcomes of the NZ CRS Cost Benefit Analysis are as follows:

1. Compared to business as usual of no NZ CRS and a deposit of NZD20-cents and container return rate of 85%, a scheme that includes glass beverage containers would result in Aotearoa New Zealand's society being better off by NZD\$1,101million in present value (PV) terms. This would see benefits exceed costs by 49%. At a deposit of NZD10-cents and container return rate of 75% this would reduce from NZD\$1,226million to NZD\$265million, a difference of NZD\$961million.
2. If glass beverage containers were removed from the NZ CRS then, under the NZD20-cent deposit/85% return rate the net benefit to NZ society reduces from NZD\$1,101million to NZD\$81million, a difference of NZD\$1,020million in present value (PV) terms. At the NZD10-cent deposit/75% return rate the net benefit to society reduces from NZD\$265million to NZD\$233million, a difference of NZD\$498million.
3. The implementation of the NZ CRS will reduce current greenhouse gas emissions. The value of this is between NZD\$35million and NZD\$37million for a NZ CRS that includes or excludes glass, respectively.
4. The removal of beverage containers (including glass in the NZ CRS) from kerbside refuse and recycling collections will reduce kerbside collection costs by NZD\$168million. If glass containers are excluded, then the kerbside collection cost savings will reduce from NZD\$168million down to NZD\$35million.
5. Avoided landfill costs represent a saving of NZD\$29m (including glass in the NZ CRS). This saving will reduce to NZD\$14million if glass is excluded from the NZ CRS.
6. Reduced litter clean-up costs (savings) are NZD\$63.5million with glass in the NZ CRS and NZD\$20million without glass in the NZ CRS.

The NZ CRS financial model is one critical element in the design of the NZ CRS and additional modelling will be required during the NZ CRS implementation stage to ensure a robust assessment has been completed.

## Key Findings

The outcomes of the research showed that the financial arrangement of a scheme is dependent on the design and application of the deposit on the beverage producers; specifically, whether the scheme is modelled as a deposit or refund model. Similarly, the research indicates that the financial design of a scheme influences the operation of a scheme including return rates, the ability for the scheme to have sufficient funds to invest into community and/or environmental initiatives and consumer engagement, depending on the objectives and success measures of the scheme.

A deposit model is based on the beverage producer paying the relevant deposit to the agency responsible for the scheme operation (e.g., Managing Agency) on each container sold to market, regardless of whether the consumer returns the container or not for a refund. Under a deposit model, the Managing Agency retains any unredeemed/unclaimed deposits, interest accrued on deposit funds and revenue from the sale of scheme material to help fund the scheme which helps to reduce any final administrative costs charged to the beverage producer. In comparison, under a refund model the beverage producer only pays for the actual number of containers returned, with no unredeemed/unclaimed deposits available to reduce scheme costs. Consequently, the scheme cost to beverage producers is lower if the return rate for eligible containers is also low. However, it is also acknowledged that while a refund model provides the consumer with a scheme that is more cost effective and efficient, this type of model must be linked to strong scheme Governance and central government oversight. Further, if however, it was decided by the Government of the day that the

NZ CRS be controlled and managed by the beverage industry, it is then recommended that a deposit model is adopted. This is to ensure that the beverage industry is held accountable to ensuring container return rates meet and where possible, exceed scheme targets as set in the bespoke NZ CRS legislative instrument.

In existing container return schemes, the value of the deposit varies depending on the type and/or size of the container and consumer engagement. A flat rate provides equal incentive to return all containers, ensures that the system is fair to all producers, and is simpler to administer. The majority of well performing European container return schemes have a deposit value of the equivalent NZD30-cents per eligible container with the recently commissioned Scottish scheme setting a deposit value (20p) of approximately NZD40-cents per eligible container. The value of the deposit and any associated scheme related fees is also influenced by whether the responsibility of paying for the scheme sits with the beverage producer or with the consumer.

Where a scheme collects unredeemed deposits (deposits that were paid on the container, but the containers were not redeemed through the scheme), the total value of these deposits is linked to the container return rate particularly in the early stages of a deposit scheme. Across the global container return schemes, the revenue generated from unredeemed/unclaimed container refunds is reported to support funding of the respective scheme, while acknowledging that in some schemes the unredeemed deposits may be kept by the beverage industry or by the respective scheme government authorities. This is achieved through the beverage industry (where the beverage industry manages the scheme) retaining and using unredeemed/unclaimed container refunds to cover their costs, or the government taking ownership of these funds. In some cases, the value of material recyclate has been reported to fund the operation of the scheme. However, most container return schemes also have additional fees to assist with funding the scheme (including handling expenses associated with the recovery of materials) such as Container Recycling Fees.

There is recognition across the global container return schemes that not all container packaging materials are equal with some more recyclable and valuable than others. This means that materials that are difficult to recycle or problematic such as liquid paperboard may need to incur additional cost (e.g., an Advanced Material Recycling Fee) to see them successfully recycled in keeping with the outcomes of the NZ CRS design while other materials may receive a net income such as aluminium. Approaching this in an open and transparent way ensures container material choices by beverage producers are recognised and reflects any net cost or revenue that is expected to ultimately be passed on to the customer. Also, in keeping with the outcomes of the NZ CRS design, the non-financial impacts associated with container material choice must be factored in or provided for to help shape the direction and choice of container material in the future.

In the establishment of container return schemes, the eligible scheme material is allocated a financial value that in most cases is more than its material value (e.g., scrap aluminium). The entity responsible for operation and management of the scheme needs to have in place monitoring and enforcement procedures to prevent fraudulent activity and claims. Fraud may include situations whereby a collection contractor might collect uncompacted containers from an RVM and pass these back through the machine to redeem the refund. Where RVMs are used that compact and/or crush the containers (e.g., aluminium cans, plastic bottles), the container is 'destroyed' so that the container or unique identification scheme logo cannot be re-read by the RVM.

All global container return schemes share the need for collection and sorting of scheme eligible containers whereby retailers and/or collection depots are responsible for handling empty containers which are then transported to the materials processor or direct to the container manufacturer. A handling fee is used to compensate these collection facilities and is generally paid by the scheme Managing Agency. However, it is the beverage producer that pays both the deposit and the handling fee per container to the scheme Managing Agency. Some global schemes apply a differential handling fee depending on whether beverage containers are compacted or sorted, with compaction receiving a higher handling fee reflecting the transport efficiencies generated by compacting the containers and that compaction at the RVM is reported to reduce the opportunity for fraudulent claims.

The selection and implementation of scheme container return facilities will influence the type and number of options available to a consumer in order to receive the appropriate eligible container refund. Schemes that employ manual collection facilities typically provide refunds in cash or via an electronic funds transfer. Where automated collection facilities are used, customers are provided range of container refund options, including vouchers which can be redeemed at supermarkets for cash or a discount on their shopping bill, direct funds credit (e.g., PayPal) to a nominated bank account, or donation to a charity. A consumer may elect to donate their containers to a charity, school or local community group after which the receiver takes ownership of the refund. In this case, the community group, school or charity can elect to receive the eligible refund through the available scheme options.

A consumer may elect to place the eligible material in the kerbside recycling bin. In this case, the businesses that process the collected kerbside materials (i.e., Material Consolidation Facility or Material Recovery Facility) can claim this amount or may have a refund sharing agreement in place with the local council. While a container return scheme is likely to provide MRFs and councils with revenue from unredeemed/unclaimed deposits, this must be considered in the overall context where the amount of recyclable material entering a MRF from kerbside collections is likely to decrease as consumers seek to redeem the deposit value. However, the impact of any changes in recyclable material entering a MRF is also dependent on the MRFs broader commercial arrangements. The MRF may also see a reduced amount of gate fees collected, which may reduce the amount of material it can sell to commodity markets. Savings may also be realised by councils through reduced kerbside collection costs and extended landfill life.

The transport of materials may include management by the Managing Agency whereby contracts with logistics providers are entered into, the Managing Agency utilises their own transportation fleet, or third-party logistics providers service collection depots or processors. While each arrangement has their own unique attributes, generally, the cost of logistics in a container return scheme can represent a large cost of the scheme operational finances. An important consideration is the price impact variation depending on metropolitan versus regional/remote areas and transport preferences depending on container type and volume (e.g., higher proportion of glass versus compressed plastic bottles).

In addition to maximising transport efficiencies by methods such as contracting third parties and utilising back-haul arrangements, the Managing Agency needs to ensure that strict anti-fraud measures are put in place to closely monitor and assess the performance of the logistics companies involved in the scheme. Where the Managing Agency does not retain oversight and/or control of the logistics companies, the Managing Agency risks increased fraudulent activities due to lack of data transparency.

Where schemes utilise manual collection facilities such as collection depots, automated container counting and verification helps to identify fraudulent activity and ensure that payment is only provided on eligible scheme material. To help achieve this, scheme eligible containers need to include a specific scheme logo (e.g., unique scheme identifier) which is applied in a way to minimise fraud.



Reporting of clear and transparent scheme related information is also an important design consideration. Many existing container return schemes employ an integrated but separate financial accounting system to manage scheme costs and unredeemed/unclaimed deposits. Reporting of key performance data by the scheme Managing Agency responsible for scheme operations and performance provides greater clarity and transparency on the efficiency of the scheme whilst highlighting areas of improvement.

The refund amount is the key element that governs consumer behaviours and hence likely to impact the success in achieving a high return rate. The OECD recommends that the deposit value should be high enough to incentivise consumers to put in the additional effort to return their bottles, and that the deposit value can impact initial purchasing behaviour. The incentives provided by the deposit value could be dependent on the type and cost of the beverage itself, and this could have unexpected consequences on consumer behaviours. If beverages are clearly labelled to inform consumers that they are paying a refundable deposit and if the system for returning the beverages is convenient, then the impact, as reported by the OECD, of the deposit on the consumption behaviour of consumers should be limited.

According to the New South Wales Environment Protection Authority (EPA), incentives in container return schemes are effective in making positive long-term behaviour changes for people who don't already recycle, people who describe themselves as 'non-environmentalists', and lower income householders. According to the New South Wales EPA, incentives with a higher financial value generated higher return rates. The relationship between the deposit value and return rates however is not linear and after a certain point, high value incentives can generate smaller increases in return rates. Other variables can also contribute to this such as the location of collection return facilities. A feasibility study undertaken in 2009 for a container deposit scheme in Tasmania suggested that a deposit value of AUD20-cents is adopted rather than AUD10-cents. The study stated that the value can help address the diminished deposit value over time which eventually results in decreased recycling rates. To keep up with inflation, preliminary analysis suggests that an AUD5-cent deposit increase is recommended for approximately every 10-years.

Of the Aotearoa New Zealand consumers surveyed between February and March 2020:

- 78% were in favour of a NZ CRS with 72% reporting that they were very likely to use the NZ CRS.
- 79% reported convenient drop-off points (i.e., container return facilities) and 67% reporting the need for easy to understand information regarding what containers the NZ CRS covers;
- 64% noted that all containers made of plastic, glass and metal should be included in the NZ CRS;
- 70% noted that supermarkets would provide the most convenient place to return scheme eligible containers followed by 63% at collection depots (e.g., community recycling centres and recycling facilities), 40% to other retail outlets (e.g., bottles stores and dairies);
- 58% (more than half of respondents) considered a deposit amount up to NZD20-cents would be sufficient;
- 40% of respondents supporting cash, 21% direct payment to a bank account, 16% voucher, 6% charity and the remaining 17% reporting other methods; and
- 69% believed it was somewhat important or very important for the refundable deposit fee to be shown on shopping receipts and 62% believed it was somewhat important or very important for the non-refundable scheme administration fee to also be shown on shopping receipts.

### **Component(s) to be Included in the New Zealand Container Return Scheme Design**

Taking into account the key findings and feedback from the SDWG, the Project Team are of the view that the NZ CRS financial model will be based on the principle that beverage producers are to pay for the material that is supplied and sold to market and any additional costs associated with hangarua - recycling and beneficial use. Scheme costs are to be passed through to the consumer at the point of purchase and these costs are to be visible to the consumer (e.g., itemised on the shopping receipt).

The Project Team consider the refund model to provide the consumer with a scheme that is more cost effective and efficient but that a refund model must be linked to strong scheme Governance and central government oversight. The reasons for the refund model include, but are not limited to, providing a smoother transition of price at the consumer level as the scheme establishes. Further, if however, it was decided by the Government of the day that the NZ CRS be controlled and managed by the beverage industry, it is then recommended that a deposit model is adopted. This is to ensure that the beverage industry are held accountable to ensuring container return rates meet and where possible exceed scheme targets as set in the bespoke NZ CRS legislative instrument.

In determining an appropriate deposit value, other well performing global container return schemes such as those in Europe were considered, including feedback received from Australian government agencies which specifically noted that the deposit value of AUD10-cents was set too low. Additionally, the outcomes of the ConsumerNZ customer survey undertaken for the CRS Project and the need to ensure consumer engagement and drive positive behaviour change were also considered. Notwithstanding the original recommendation of a NZ CRS NZD20-cent deposit, on balance the Project Team are of the view that a NZD10-cent deposit will be put in place for a period of no more than 3-years (36-months) to align with the first scheme review period, with the deposit automatically increasing to 20-cents at year-5 (60-months) allowing for a 2-year (24-month) transition period if the 70%-year-3 (36-month) container return target is not met. If the return rate does not reach 80% within 4-years (48-months) the deposit level will automatically increase to NZD20-cents at year-6 (72-months) allowing for a 2-year (24-month) transition period if the 80%-year-4 (48-month) container return target is not met. The next deposit review will align with the 5-year (60-month) scheme review period with the deposit increasing to NZD20-cents if the 85%-year-5 (60-months) container return rate target is not met. Again, a 2-year (24-month) transition period will be provided for should this situation occur.

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*A flat-rate minimum deposit value will be applied to all eligible containers. The deposit level will be reviewed every 5-years (60-months) to align with the regulated scheme review periods and the deposit value will be coupled with annual reviews undertaken by the Managing Agency to ensure a minimum container rate of 85%.*

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Further, a flat-rate minimum deposit value will be applied to all eligible containers. The deposit level will be reviewed every 5-years (60-months) to align with the regulated scheme review periods and the deposit value will be coupled with annual reviews undertaken by the Managing Agency to ensure a minimum container rate of 85%. The scheme review periods and the requirements for deposit level increases will be included in the bespoke NZ CRS legislative instrument. Further, no later than 9-months before the NZ CRS commences a final review will be undertaken by the regulatory authority to confirm the starting deposit rate of NZD10-cents per container is still appropriate.

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*Scheme costs are to be passed through to the consumer at the point of purchase and these costs are to be visible to the consumer (e.g., itemised on the shopping receipt).*

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Further, the specific container return scheme legislative instruments are to set a minimum eligible container return rate of 85% target to the NZ CRS with interim annual container return targets of 60%-year-1 (12-months), 65%-year-2 (24-months), 70%-year-3 (36-months), 80%-year-4 (48-months), 85%-year-5 (60-months) set for the first five (5) years (60-months) of scheme operation. Thereafter, a return rate target of 85% will apply with an aspirational target of 95%. Regulated scheme review periods are to comprise of two (2) initial scheme review periods to assess scheme performance and operation and strategic direction set at the end of the year-3 (36-months) and year-5 (60-months) financial periods, then every 5-years (60-months) thereafter. Notwithstanding the mechanisms of the existing Waste Minimisation Act 2008, a new NZ CRS specific legislative instrument will be required to enable the NZ CRS design and its goals to be fully realised.

To support consumer convenience and acknowledging the findings of the ConsumerNZ survey, a range of options for consumers to receive the deposit refund including cash, supermarket voucher (including,

for example, a 2-year expiration date), donation, electronic funds transfer, other (e.g., scheme credit system, loyalty card, gift card) will be included in the NZ CRS. The scheme Managing Agency is to have flexibility to expand the range of refund options and to determine whether container return facilities are to provide all or several options to the consumer.

The NZ CRS Managing Agency will set an appropriate handling fee and reviews of the handling fee at intervals to be determined by the Managing Agency. Revenue generated by the sale of eligible scheme material to be passed on via the Advanced Material Recycling Fee to beverage producers to reflect the choice of container materials used. An Advanced Material Recycling Fee (AMRF) is to be applied, so that materials that are difficult to recycle may incur additional cost to see them recycled while other materials may receive a net income such as aluminium.

The Managing Agency may approve **compaction** and/or **baling** of scheme material at some container return facilities where this would contribute to improved scheme efficiencies without compromising increased risk of fraud. The Managing Agency will establish a scheme baling and audit process based on robust standards and procedures that the container return facility must contractually abide by. The baling process will be standardised across the scheme. The Managing Agency will also determine the optimised compaction ratio that enables the scheme MCF to re-count and verify eligible scheme containers. Appropriate transportation logistics providers and/or back-haul arrangements are to be utilised including for remote/regional areas.

The Managing Agency will implement appropriate anti-fraud measures including, for example, contractual obligations, auditing and verification and reporting to closely monitor and assess performance of the logistics companies involved in the scheme. There is also a role for the scheme regulator (i.e., central government agency responsible for the NZ CRS) and/or police in legally enforcing the breaches of the law and regulations where relevant.

The Managing Agency will also give effect to fraud mitigation measures such as a specific scheme logo applied in a way so as to minimise fraud, to the integration of a separate financial accounting system and Information and Communications Technology (ICT) platform to manage scheme costs, and to reporting of key scheme performance data.

Further, the Managing Agency will support the establishment of a revenue sharing arrangement (deposit or handling fee amount, including a transitional period) underpinned by clear guidelines (e.g., the default position could have the deposit shared 50/50 between the two parties making sure no party is disadvantaged nor gains a windfall from the NZ CRS with any surplus returned to the ratepayer) between the local council and the MRF for eligible containers collected via kerbside recycling collections. It is recommended each Territorial Local Authority and MRF operator undertake their own negotiations (excluding the involvement of the Managing Agency) and reach agreement on revenue sharing as this recognises the different contractual arrangements that exist across Aotearoa New Zealand. The revenue sharing arrangement is to be established and set at a level that will support kerbside recycling and incentivise the MRF to fund processing and maximise recovery of eligible containers. It is recommended each Territorial Local Authority and MRF operator reach agreement on revenue sharing (the default position could have the deposit shared 50/50 between both parties making sure no party is disadvantaged nor gains a windfall from the NZ CRS with any surplus returned to the ratepayer).

## Extended Producer Responsibility and Kaitiakitanga Whakanaonga - Product Stewardship

### The Aotearoa New Zealand Context

As global economies grow, continued population growth and demand for products and services continue to place pressure on rawa taiao - environmental resources. To limit this, it will require countries to implement policies that improve whakahaere rauemi - resource management and ensure sustainable materials management building on the principles of the pūnaha whakarōpū para - waste hierarchy of reduce, whakamahi anō - reuse and recycle. Additionally, there is now growing awareness and acceptance that countries must look at reducing the impacts of manufactured products on our taiao - environment through ōhanga āmiomio - circular economy.

The New Zealand Government recognises that continued progress is needed to transition from a linear economy to ōhanga āmiomio - circular economy with measures such a voluntary and regulated kaitiakitanga whakanaonga - product stewardship for priority products. The Waste Minimisation Act 2008 (WMA) has several functions to facilitate this transition, including:

- Bans of specific products – Aotearoa New Zealand has recently enacted the WMA to ban two products to address the environmental harms of microplastics and marine plastics: banning the sale and manufacture of microbeads in certain wash-off products (as at 7 June 2018) and banning the sale of single-use plastic shopping bags (as at 1 July 2019).
- Implementing regulated Kaitiakitanga Whakanaonga - Product Stewardship.

Acknowledging there is no one Kaitiakitanga Whakanaonga - Product Stewardship scheme and associated governance structure that could be simply transposed into Aotearoa New Zealand to cover all material and product types, it is important to evaluate each programme objectively, understand its drivers, and consider its potential applicability to Aotearoa New Zealand conditions. These drivers include the impact of a scheme on delivering positive economic, environmental, cultural and social outcomes and behaviour change. Consequently, the role of a scheme Managing Agency within the NZ CRS is an important aspect as it is the entity responsible for the operation and performance of the scheme.

To implement regulated Kaitiakitanga Whakanaonga - Product Stewardship in Aotearoa New Zealand, several other legislative framework documents require consideration with specific components assessed for their application to the implementation of a NZ CRS. Importantly, Aotearoa New Zealand currently has a voluntary approach to kaitiakitanga whakanaonga - product stewardship although the Waste Minimisation Act 2008 has enabled the government to declare six (6) priority products (i.e., General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020) meaning a mandatory kaitiakitanga whakanaonga - product stewardship scheme would be established.

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*There is now growing awareness and acceptance that countries must look at reducing the impacts of manufactured products on our taiao - environment through ōhanga āmiomio - circular economy.*

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WasteMINZ surveyed their membership in 2018 to determine their views on a range of matters including kaitiakitanga whakanaonga - product stewardship and which waste streams were considered highest priority for kaitiakitanga whakanaonga - product stewardship intervention. 93% supported the concept that well-designed kaitiakitanga whakanaonga - product stewardship schemes can build resilience into Aotearoa New Zealand's waste and hangarua - recycling systems to mitigate economic issues. 96% agreed in principle that they support the designation of priority product status for problematic waste streams. 83% supported, in principle, the establishment of container deposit schemes that are not simply limited to beverage containers.

Further, the NZ CRS is to be established as a mandatory kaitiakitanga whakanaonga - product stewardship scheme that is designed and implemented to assist the Aotearoa New Zealand economy

transition from a linear economy to ōhanga āmiomio - circular economy. This will require everyone to take responsibility for beverage containers and their impact on the taiao - environment.

## Key Findings

The outcomes of the research indicated a growing awareness of the continued pressure that global economies and populations are having on Papatūānuku and rawa taiao - natural resources to produce the wide range of products currently available on the market. To limit this, countries are required to implement policies that improve whakahaere rauemi - resource management and ensure sustainable materials management building on the principles of the pūnaha whakarōpū para - waste hierarchy.

Many countries, particularly those within the Organisation for Economic Co-operation and Development (OECD) have adopted a policy approach based on “polluter pays” where the financial responsibility for the entire huringa mataora - life-cycle of the products and packaging is shifted from taxpayers and councils to producers and ultimately the consumer. As a result, Extended Producer Responsibility and Kaitiakitanga Whakanaonga - Product Stewardship seeks to encourage producers to redesign products and packaging reducing the amount of post-consumer material entering ruapara - landfills, increase hangarua - recycling and whakamahi anō - reuse (e.g., refillables) and avoid using materials that may pose risks to human health or the taiao - environment.

There are several key Extended Producer Responsibility and Kaitiakitanga Whakanaonga - Product Stewardship system policy drivers which can enable producers to take responsibility for their products and packaging end-of-life management. These include product take-back requirements (e.g., the voluntary take-back schemes offered by Resene Paints, Vodafone and Spark), economic and market-based incentives (e.g., deposit refund, Advanced Disposal Fees, material taxes, combination tax/subsidy), regulations and performance standards (e.g., requirements on the use of minimum recycled content to encourage, for example, greater take-back of products and packaging), and information (e.g., raising public awareness through measures such as labelling, consumer communication).

Producers have been reported to set up Extended Producer Responsibility and/or Kaitiakitanga Whakanaonga - Product Stewardship systems which are managed by Producer Responsibility Organisations (PROs), the equivalent of which is the Managing Agency in the NZ CRS design. To enable the successful establishment of Extended Producer Responsibility and/or Kaitiakitanga Whakanaonga - Product Stewardship systems, the design and governance of the scheme is key to their performance, for example, setting of scheme targets, compliance monitoring and financial management. The governance of Extended Producer Responsibility and/or Kaitiakitanga Whakanaonga - Product Stewardship systems involves roles for government, producers and providers of collection and processing services.

As countries implement mechanisms to transition from a linear economy to ōhanga āmiomio - circular economy, utilising mechanisms such as Extended Producer Responsibility and mandatory kaitiakitanga whakanaonga - product stewardship schemes (e.g., NZ CRS), opportunities for employment may be supported thereby creating local and national economic opportunities. It is though acknowledged that further detailed modelling and cost-benefit analyses will be required during the NZ CRS implementation stage to provide clarity on the opportunities and constraints presented by the NZ CRS.

Legislation is a significant driver in the establishment of Extended Producer Responsibility and Kaitiakitanga Whakanaonga - Product Stewardship systems, with most systems being mandatory rather than voluntary. The guiding Extended Producer Responsibility and Kaitiakitanga Whakanaonga - Product Stewardship system principles for governments should provide producers with incentives to change product designs, stimulate innovations, take a huringa mataora - life-cycle approach, clearly define responsibilities and chose flexible policy instruments adapted to the particular product and waste stream. Further, the objective and scope of the Extended Producer Responsibility and Kaitiakitanga Whakanaonga - Product Stewardship system should be clearly defined, including:

- Identifying producers of the products;
- Establishment of reporting and monitoring;
- Development of appropriate enforcement mechanisms and sanctions;
- Increasing the level of the EPR system ambition;
- Broadening the scope of products covered;
- Internalising environmental costs; and
- Transparency. The EPR system should make information available to assess scheme performance and identify ways in which the scheme can be made more efficient and effective.

Internalisation of end-of-life costs and strict enforcement strengthen incentives for improving the eco-design of products and packaging whereby the Extended Producer Responsibility system sets fees at a level where they recover the full cost of the end-of-life management of the products covered by the system (e.g., NZ CRS). Depending on the structure of the Extended Producer Responsibility system and any associated kaitiakitanga whakanaonga - product stewardship schemes, the consumer may be required to pay at the point of sale a deposit or fee for the cost of collection, hangarua - recycling and processing the material.

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*Internalisation of end-of-life costs and strict enforcement strengthen incentives for improving the eco-design of products and packaging whereby the Extended Producer Responsibility system sets fees at a level where they recover the full cost of the end-of-life management of the products covered by the system (e.g., NZ CRS).*

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Three (3) key measures incentivise improved product design and accountability for end-of-life management:

- Producer responsibility implemented at the level of individual producers to incentivise eco-design of products.
- Producer fees should be closely linked to the actual end-of-life treatment costs of their products (i.e., costs to collect, consolidate and beneficially use materials), rather than fixed fees and/or modulated fees that differ according to the specific design features that make products more easily recyclable.
- Where products are globally traded, better eco-design incentives could be achieved by harmonising environmentally sensitive design through legislation or financial incentives (e.g., environmental tax).

To help achieve a measurable quantitative reduction in the consumption of single-use products, there are several conditions which are recommended for the establishment of effective whakamahi anō - reuse (e.g., refillables) schemes, including:

- Container design – containers that have durability enhanced by universal container designs that enable acceptance of containers across different whakamahi anō - reuse schemes.
- Hygiene requirements – appropriate washing facilities as well as transportation and storage.
- Convenience and accessibility – engagement with consumers to highlight the scheme and the use of reusables as alternatives/substitutes for single-use packaging.
- Scheme infrastructure and scale of scheme – appropriately located drop-off facilities, collection logistics, washing infrastructure, redistribution, customer refunds where appropriate, store marketing, employee training.

To support this process Government policy will be required, including:

- Include targets on the share of refillable beverage packaging placed on the market.
- Place a tax on single-use plastics (NOTE: the same principle could equally apply to all types of packaging material) such as an 'Eco-Fee' to incentivise producers to seek alternative materials.
- Consumer to have visibility on the cost of single-use packaging through payment in store.

- Container return schemes to include a broad range of items and mandate reusable items in the scheme.
- Introduce incentives and provide financial support for reusable items and systems to overcome barriers to establishing the scheme (e.g., for the establishment of washing facility infrastructure).
- Modulation of fees on materials that are difficult to recycle versus those that have established recycling pathways and/or are reusable.
- Support procurement processes to include reusable targets.

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*The NZ CRS is to be a mandatory kaitiakitanga whakanaonga - product stewardship scheme that is designed and implemented to assist the Aotearoa New Zealand economy transition from a linear to ōhanga āmiomio - circular economy*

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The three (3) NZ CRS objectives will provide the foundation on which the scheme will give effect to the principles of Extended Producer Responsibility and Kaitiakitanga Whakanaonga - Product Stewardship. The benefit of applying these foundation Extended Producer Responsibility and Kaitiakitanga Whakanaonga - Product Stewardship objectives to the NZ CRS design is to acknowledge and accept the changing global economy and the need to support the Aotearoa New Zealand Government in efforts to transition from a linear economy to ōhanga āmiomio - circular economy. Additionally, recent events including China National Sword and the COVID-19 global health pandemic, have highlighted the delicate relationship between reliance on global post-consumer hangarua - recycling markets (e.g., plastics and fibre) and the volume of post-consumer recyclables produced by economic activity. As a result, Aotearoa New Zealand along with many other countries, is now having to reassess the waste generation and management framework, including, for example, declaring six (6) priority products which would require producers to develop schemes for Ministerial accreditation to extend producer responsibility for reducing huringa mataora - life-cycle impacts of those products through to investigating onshore processing capacity and considering regulations to establish mandatory kaitiakitanga whakanaonga - product stewardship schemes – such as the NZ CRS.

### **Component(s) to be Included in the New Zealand Container Return Scheme Design**

Taking into account the key findings and feedback from the SDWG, the Project Team are of the view that the NZ CRS is to be a mandatory kaitiakitanga whakanaonga - product stewardship scheme that is designed and implemented to assist the Aotearoa New Zealand economy transition from a linear to ōhanga āmiomio - circular economy.

Regulated scheme review periods are to be implemented comprising of two (2) initial scheme review periods to assess scheme performance and operation and strategic direction set at the end of the year-3 and year-5 financial periods, then every 5-years thereafter. Further, it is recommended that the specific NZ CRS legislative instruments provide for and enable the following:

- Producer responsibility implemented at the level of individual producers to incentivise the design of products in keeping with the principles of Extended Producer Responsibility.
- Stimulate and encourage innovations.
- Take a full huringa mataora - life-cycle assessment approach (i.e., cradle to cradle).
- Clearly define responsibilities for all NZ CRS scheme participants.
- Regulations and performance standards that will see, for example, the use of minimum recycled content and encourage greater recovery and pull through demand of products and packaging.
- Economic and market-based instruments including the application of the AMRF for difficult to recycle materials.

A single independent not-for-profit Managing Agency will be established to manage the operations and performance of the NZ CRS. The Managing Agency will give effect to the Extended Producer Responsibility and Kaitiakitanga Whakanaonga - Product Stewardship by implementing the specific

container return scheme legislative instruments and setting a minimum 85% eligible scheme container return rate target and an aspirational eligible scheme container return rate target of 95%, including the drivers against which the Managing Agency scheme performance is held accountable, establishing a risk and compliance monitoring programme, implementing a transparent financial management system and Information and Communications Technology (ICT) platform including the management of any free-riding, and establishing clear and transparent reporting of scheme costs to consumers at the point of sale.

The Managing Agency will also promote and develop the refillables market, including:

- Funding and promoting the benefit and awareness of refillables as a preferred choice to New Zealanders;
- Working with existing Aotearoa New Zealand refillable schemes to identify and remove barriers;
- Investing in infrastructure by addressing barriers such as the return, re-washing and refilling of bottles;
- Ensuring that the method of return by customers is convenient and accessible;
- Establishing NZ CRS container return facilities that can accept, sort and store for transportation both eligible single-use and reusable beverage containers;
- Facilitating the uptake of reusables through the integration of strategic directives embedded within the NZ CRS scheme performance indicators; and
- Securing the funding to achieve the above from the scheme.

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*The outcomes of the research and feedback received from the SDWG acknowledged the need to establish a bespoke NZ CRS legislative instrument to provide clearly defined scheme specific conditions.*

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This is in alignment with the three (3) key NZ CRS outcomes, which are:

1. Change the way Aotearoa New Zealand values beverage containers that will see increased hangarua - recycling and new opportunities for refilling;
2. Reduce the volume of plastics and other container litter currently ending up in our streams, moana - marine environment, wāhi tūmatanui - public spaces and ruapara - landfills; and
3. Give effect to ōhanga āmiomio - circular economy outcomes and any future priority product guidelines.

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*A single independent not-for-profit Managing Agency will be established to manage the operations and performance of the NZ CRS.*

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## Legal Framework

### The Aotearoa New Zealand Context

There is growing recognition that the economy must transition from a linear to ōhanga āmiomio - circular economy, with international market changes such as restrictions by China on the importation on waste and recyclables and the COVID-19 global health pandemic, highlighting the need to take a closer look at the way Aotearoa New Zealand manages its waste, including current onshore processing and hangarua - recycling.

The outcomes of the research and feedback received from the SDWG acknowledged the need to establish a bespoke NZ CRS legislative instrument to provide clearly defined scheme specific conditions. However, a detailed legal assessment will be required during the NZ CRS implementation stage to ensure all legal components have been addressed and accounted for in the bespoke NZ CRS legislative instruments to support the implementation of the NZ CRS and the ultimate success of the scheme.



## Key Findings

The research found that most global container return schemes are supported by a specific set of legislative instruments to enable schemes to operate at maximum efficiency, protect the scheme against fraud and ensure scheme participants have clarity and transparency on their respective roles and responsibilities. To achieve this, scheme legislative instruments commonly include specific operational and performance measures, including:

- The conditions of acceptance for eligible containers;
- The requirements for the collection points and container return facilities;
- The accepted counting methods;
- The forms of refunds that can be provided;
- The amounts of deposits and refunds;
- Signage and scheme awareness requirements;
- Legal obligations of all participants;
- Registration, recording and reporting requirements;
- Application of environmental taxes (e.g., Norway);
- Resource recovery performance indicators; and
- Prohibited activities and penalties.

An important instrument of legislation is that it provides for appropriate anti-fraud measures as fraudulent activity leads to short-changing and money leaving the scheme, damaging the ōhanga āmiomio - circular economy created by the scheme, and leaving the country's hangarua - recycling economy. The types of fraud undertaken can be categorised by two primary activities, fraud undertaken for illegal economic profit and fraud undertaken to avoid the fulfilment of legal obligations. Penalties are one of several measures for discouraging fraud and encouraging compliance with the law. Other fraud management measures identified in scheme legislative instruments include:

- Barcodes and specific scheme marking;
- Automated counting;
- Crushing of containers;
- Verification processes;
- Record keeping;
- Key performance indicators and quotas;
- Contractual agreements; and
- Signage.

Auditing processes are also some of the most continuously used and effective measures of ensuring compliance. In many schemes, container return facilities must meet strict quality control and audit procedures with some schemes requiring container return facilities to undertake secondary and tertiary counts of collected eligible containers. Producers can be required to keep auditable electronic records of their supplied beverages and report to the Managing Agency on the volume of their beverages by month and by material type. Auditing of export funds is commonly managed via Export Refund Claim Agreements and carried out by the Managing Agency. The requirement for reporting of robust, accurate and consistent key performance data is also vitally important to minimise fraud. Robust reporting can help ensure correct refunds are calculated and issued, can help keep scheme participants accountable, track financial flows of the scheme, track the quotas and operational performances of the participants, provide transparency to the scheme, and highlight areas of improvement.

In addition to the auditing the information produced by scheme operators, some schemes audit the information released by the Managing Agency, such as engaging an independent financial accounting firm to assess scheme financial data thereby ensuring protection of the commercial information of all beverage producers since the Managing Agency commonly includes representatives from beverage

producers. To ensure scheme transparency, many Managing Agencies are required through legislation to publish publicly available annual reports including financial statements that are independently verified and provide scheme reports to the government.

The roles and responsibilities of all scheme participants are usually also clearly outlined in the legislation or regulations to ensure that fairness is upheld consistently during the scheme, and that all scheme participants are clearly aware of their legal obligations. A monitoring or enforcement body, such as the Managing Agency, is commonly required to ensure that the roles and responsibilities are as outlined by the legislation or regulation. In some schemes, it is the responsibility of the government department to establish procedures to protect the privileged, confidential, commercial or financial information obtained while collecting information for carrying out the requirements of the legislation or regulation. In other schemes, a Managing Agency manages the scheme, while the government department supervises compliances and audits the participants. It is often preferred that scheme regulation is undertaken by the government department to ensure that the full range of players in the scheme are protected equally. With appropriate scheme governance responsibilities, the government can penalise any fraudulent activities and failure to meet performance targets as required for the scheme.

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*Appropriate anti-fraud measures are to be established such as contractual obligations, auditing and verification and reporting to closely monitor and assess participants involved in the performance of the scheme.*

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Management of scheme finances has also been highlighted in the research as a key scheme component that requires clear controls to be established through financial management platforms that ensure full transparency of scheme costs to all scheme participants, including government. Ensuring clarity and transparency of scheme finances is a critical component for the NZ CRS to ensure both full scheme transparency and provide a safeguard to scheme participants where confidential and/or commercially sensitive information is provided to the Managing Agency which may have competitor membership.

Further, the establishment of scheme legislative instruments are commonly supported within an existing legislative framework which provides the basis for the establishment of a container return scheme legislative instrument. In the Aotearoa New Zealand context, the Waste Minimisation Act 2008, the New Zealand Waste Strategy, the Local Government Act 2002 and the Resource Management Act 1991 provide the foundation documents on which a bespoke NZ CRS legislative instrument can be established so as to ensure the success of the NZ CRS design. These pieces of legislation also ensure that those exercising functions under these acts consider Te Tiriti o Waitangi principles, give due consideration to tikanga Māori and facilitate participation by Māori. In addition to the three primary legislative Acts, the NZ CRS design is also influenced by several other national legislative documents (e.g., Litter Act 1979, Climate Change Response Act 2002) and international agreements (e.g., Montreal Protocol, Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal ) which will require detailed assessment and review during the implementation stage to ensure all relevant aspects are reviewed and accounted for in the scheme design.

### **Component(s) to be Included in the New Zealand Container Return Scheme Design**

Taking into account the key findings and feedback from the SDWG, the Project Team are of the view that notwithstanding the mechanisms of the existing Waste Minimisation Act 2008, new NZ CRS specific legislative instruments will be required to enable the NZ CRS design and its goals to be fully realised (including upholding and aligning the legislative instrument with Te Tiriti o Waitangi - The Treaty of Waitangi).

Appropriate anti-fraud measures are to be established such as contractual obligations, auditing and verification and reporting to closely monitor and assess participants involved in the performance of the scheme. Fraud mitigation measures such as a specific scheme logo and other emerging technologies (e.g., data dots, block chain) will be applied in a way so as to further minimise fraud. Further, key scheme performance data will be reported such as monthly rolling average data of scheme performance

(operational, fiscal, health and safety, customer satisfaction) and container return rate targets, or other reporting time period to align with contractual key performance indicator measures.

Fraud mitigation measures will also include a cap on the number of eligible scheme containers returned at any point in time by non-scheme registered individuals. The maximum container return amount will have to be considered across the three (3) envisaged return point scenarios (Manual Depot, Automated Depot and Return to Retail) with an emphasis on striking a balance between container return efficiency and impact on existing business activities. Return-to-Retail points may require site by site consideration to ensure that retail activities are not unduly disrupted by container return activities particularly when the return point is inside the retail operation.

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*The Managing Agency will be tasked with catalysing taupuhipuhi – interdependence and whanaungatanga – relationship across the scheme stakeholders.*

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A separate financial accounting system and Information and Communications Technology (ICT) platform will also be required to manage scheme costs. Revenue generated by the sale of eligible scheme material to be passed on via the Advanced Material Recycling Fee to beverage producers to reflect the choice of container materials used.

Further, regulated scheme review periods are to comprise of two (2) initial scheme review periods set at the end of the year-3 and year-5 financial periods, then every 5-years thereafter. Regulated incentives are to be included for all scheme participants that do not comply with, or meet, the requirements of the bespoke NZ CRS legislative instrument.

## Scheme Managing Agency Organisational Form

### The Aotearoa New Zealand Context

In Aotearoa New Zealand, the Managing Agency will be tasked with catalysing taupuhipuhi – interdependence and whanaungatanga – relationship across the scheme stakeholders.

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*A separate financial accounting system and Information and Communications Technology (ICT) platform will also be required to manage scheme costs.*

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The NZ CRS Managing Agency and Governance Board will be a single organisation with a clear separation between the management and governance functions. The responsibility for the scheme legislative instrument and oversight of the performance of the NZ CRS is anticipated to fall with central government, however it is not yet confirmed which government department will be responsible for this role. A Technical Advisory Group will provide advice to the Managing Agency Governance Board. The broad components of the Managing Agency are expected to comprise:

- The Managing Agency Governance Board;
- The Managing Agency Executive Management Team led by the Chief Executive Officer;
- The Managing Agency Operations Team; and
- 16 Regional Coordinators.

The three (3) NZ CRS Managing Agency organisational form and governance options considered and assessed during the design process included:

- Company;
- Charitable Trust; and
- Incorporated Society.

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*Regulated scheme review periods are to comprise of two (2) initial scheme review periods set at the end of the year-3 and year-5 financial periods, then every 5-years thereafter. Regulated incentives are to be included for all scheme participants that do not comply with, or meet, the requirements of the bespoke NZ CRS legislative instrument.*

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The outcome of the preliminary organisational form assessment noted a charitable trust would provide the NZ CRS Managing with an appropriate organisational form. It is recommended that further detailed assessment is carried out during the NZ CRS implementation stage to confirm the most appropriate

Managing Agency organisational form, including for example, a weighted attribute criteria and scoring methodology of the range of options to then evaluate and determine the preferred option for a consumer focussed NZ CRS. The preferred Managing Agency organisational form will need to be guided by and reflect the aims of NZ CRS and objectives to ensure the structure best reflects the needs of Aotearoa New Zealand and ultimately the consumer.

The available global information, the results of the preliminary Managing Agency organisational form options analysis and feedback provided from the SDWG supports the establishment of an appropriately structured single, independent not-for-profit Managing Agency supported by a scheme Governance Board, clear mandate for the Managing Agency and a bespoke container return scheme legislative instrument.

The NZ CRS legislative instrument should set the minimum scheme requirements to provide the Managing Agency with clarity on scheme delivery expectations. The implementation of a NZ CRS design will require alignment with existing legislative frameworks such as the New Zealand Waste Minimisation Act 2008 and where appropriate, may also require legislative change, for example, bespoke legislative instruments, to allow for the effective implementation of the NZ CRS. Any such change will be the decision of, and at the discretion of, the New Zealand Government.

Through robust procurement and probity processes for the collection, movement, and processing of eligible scheme containers, the scheme Managing Agency will ensure a competitive and transparent process and equality amongst potential service providers. Recognising the NZ CRS will require an implementation stage, an Establishment Governance Board will be required with an interim Managing Agency Chief Executive to approve the development of scheme processes in alignment with any central government requirements. The outcomes of the procurement process will be a series of contractual arrangements, including commercial contracts, licencing and registration agreements.

Further, a bespoke procurement process will be established for the NZ CRS, comprising both informal and formal engagement with the market. The process of informal market engagement is vital in ensuring the market is aware of the NZ CRS, the objectives of the scheme, the commercial opportunities and the expectations of becoming a provider of services to the NZ CRS. There may also be interest from international organisations with relevant experience and capabilities in delivering the required services. The process of formal market engagement will follow completion of any informal engagement and is expected to occur via an open competitive market tender process. The specific details of the procurement and probity processes will be established during the NZ CRS implementation stage.

## Key Findings

The research found that the scheme Managing Agency provides a pivotal role in the ultimate success of a container return schemes operation and performance. Commonly, the Managing Agency is required to deliver a consistent consumer focussed scheme, striving to make the scheme as cost efficient as possible, whilst continually improving on, and reporting against, the scheme's social, economic, cultural and environmental strategic objectives – a common requirement of prescribed container return scheme regulations.

In most global container return schemes, it is the beverage producer that is responsible for establishing, operating and managing the scheme Managing Agency which may be a collaboration between multiple beverage producers (i.e., beverage brands). In such cases, the number of beverage producer representatives may be related to their respective market share, with, for example, greater market share equating to a greater number of representatives on the Managing Agency.

While many global container return schemes are operated by the beverage industry, feedback received from the SDWG noted the need for balanced government appointed NZ CRS Managing Agency representation from a range of sectors, including for example, Iwi, recyclers, retailers, consumer, community and the waste sector to ensure the NZ CRS benefits from diverse governance and leadership.

Broadly, Managing Agencies can be not-for-profit, for-profit firms and government agencies. Most global container return schemes operate under a not-for-profit model rather than a for-profit model to ensure that scheme revenues are used to support the operation of the scheme. Operation of a not-for-profit scheme is achieved by the Managing Agency generally having to meet specific conditions which may be imposed by the Governance Board and/or required by government legislation. This may include the provision of Annual Reports with full financial transparency of the scheme and requirements to reinvest any revenues from the sale of material or unredeemed deposits to be put back into the scheme.

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*The Managing Agency will be to provide the day-to-day operational and performance management to ensure the scheme meets consumer and participant expectations, as well as regulated requirements.*

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Commonly, the Managing Agency is structured to include an Executive Management Team comprising senior managers from, for example, finance, marketing, logistics, legal, risk and audit, operations and the Chief Executive Officer who are directly responsible for the operation and management of the scheme. The Executive Management Team is typically supported by a wider team of individuals employed by the Managing Agency to carry out the day-to-day functions of the Managing Agency which may include auditing of container return facilities, tracking eligible container return rates against refunds paid and communicating scheme developments to consumers. The additional function of the Executive Management Team can be to provide transparent and robust information to the Governance Board to assist in the strategic management of the scheme. To achieve this, it is generally the Managing Agency Chief Executive Officer that provides the conduit of information through representation on the Governance Board. A Managing Agency may be required to manage and deliver all aspects (e.g., financial, marketing, consumer interface, transportation and processing) of the scheme or simply manage and deliver specific components of the scheme (e.g., collection and transportation) which in turn influences the degree of control the Managing Agency has on the performance of the scheme, and the degree of influence of government, producers, retailers, consumers, material processors and material re-processors.

Broadly, the research suggests that the ability for consumers and community organisations to actively participate in the day-to-day operations and management of a scheme is limited primarily due to the formation of predominantly industry led Managing Agencies. However, the research suggests that an Executive Management Team that can liaise with stakeholders, including the consumer and community organisations provides diversity of knowledge, contributing to a customer focussed scheme and continual scheme improvements. Additionally, schemes often establish and implement dispute resolution processes and a consumer complaints processes, for example, through secure online portal access for scheme participants, to phone contacts for consumers, ensuring that any matters and/or concerns can be raised with the Managing Agency for consideration and where required review and remedy. Innovation across the range of global container return schemes is commonly associated with system efficiencies and improving scheme effectiveness, however some schemes have also supported social innovations, including, for example, depot operator marketing toolkits.

Commonly, container return scheme Managing Agencies comprise a single organisation to manage the range of eligible scheme material and brands (e.g., collection, transportation and processing), but which may also involve municipalities (i.e., New Zealand local councils) that are responsible for collection and sorting of materials (e.g., collection of eligible scheme material via kerbside recycling services). The relationship between the Managing Agency and the municipality is also known as 'shared responsibility'.

Where the scheme Managing Agency is a not-for-profit organisation, the common themes are:

- Clear expectations, including the role and responsibility of the scheme Managing Agency;
- The scheme is efficient and as low cost as possible;
- Efficient and convenient return locations for consumers;
- Transparency and accountability;
- Promote and maintain beverage container return rates;

- Continuous scheme improvement;
- Promote and where possible ensure scheme participants meet their extended producer responsibilities in regard to the eligible scheme containers;
- Provide opportunities for social enterprise and benefits to community organisations; and
- Complement existing hangarua - recycling activities and infrastructure where possible.

Additionally, in most global container return schemes Managing Agencies are required by legislation to report on the operation and performance of the scheme including audited financial statements for the specific fiscal year through reports such as Annual Reports and/or Annual Sustainability Reports. Reporting of container return scheme information ensures transparency for scheme participants, including consumers, retailers, producers, container return facilities, material processors and local and central government.

The structure and function of a container return scheme Managing Agency is most often prescribed in scheme legislative instruments, which often clearly stipulate the roles and responsibilities of the Managing Agency and its management team.

### **Component(s) to be Included in the New Zealand Container Return Scheme Design**

Taking into account the key findings and feedback from the SDWG, the Project Team are of the view that the structural arrangement and legal status (e.g., not-for-profit, charity, private, trust) of the Managing Agency will be critical elements in the establishment of a container return scheme that is managed by a balanced group of suitably qualified and experienced members. The degree of independence from the Governance Board will also be a key NZ CRS design element to ensure stakeholders are fairly and equitably represented and the views of New Zealanders are integrated and used to improve the performance of the scheme to meet and exceed public expectations.

The Managing Agency will also be established as a single independent not-for-profit organisation supported by clear regulatory conditions including consequences for not delivering on the minimum container return rate target of 85% and to strive towards the aspirational container return target of 95%, and the drivers and levers to achieve the aspirational target such as level of deposit. The roles and responsibilities, including Managing Agency review periods will also be set in the specific container return scheme legislative instruments with the Managing Agency ensuring all scheme participants comply with relevant legislation, for example, health and safety.

Fundamentally, the mandate of the Managing Agency will be to provide the day-to-day operational and performance management to ensure the scheme meets consumer and scheme participant expectations, as well as regulated requirements. The role of the Managing Agency will be to serve all New Zealanders by delivering a successful and continually improving service to consumers. The NZ CRS Managing Agency is to comprise, for example, an Executive Management Team including but not limited to, the Chief Executive Officer, Financial Manager, Operating Manager, Marketing and Communications Manager, Audit and Risk Manager, Community and Social Enterprise Manager, Collection Facility Manager and a Mana Whenua Relationship Manager.

Relationships with Mana Whenua will be interconnected throughout the NZ CRS with the Managing Agency and scheme Governance Board. This would provide a diverse management team focussed on ensuring the scheme meets and exceeds consumer and scheme participant expectations however the final position on the Managing Agency structural arrangement and its legal status will be undertaken during the NZ CRS implementation stage. Further, the Managing Agency organisation will comprise, for example, an Operations Team responsible for fulfilling the day-to-day scheme activities comprising for example, Logistics Manager, Audit and Compliance Manager,

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*The Managing Agency will be established as a single independent not-for-profit organisation supported by clear regulatory conditions including consequences for not delivering on the minimum container return rate target of 85% and to strive towards the aspirational container return target of 95%, and the drivers and levers to achieve the aspirational target such as level of deposit.*

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Finance Manager, IT Manager, Communications Manager, Community Engagement Manager, Regional Coordinator Manager.

Additionally, the Managing Agency employees, including the Chief Executive Officer are to be independent of any individual or organisation involved with the scheme Governance Board and must not own, be employed by or have any involvement in any organisation that is financially gaining from the NZ CRS. Any family, relatives, etc that are employed by the scheme Managing Agency and where such relationships exist must be fully disclosed and approved by the scheme Governance Board and not at the discretion of the Managing Agency Chief Executive Officer to approve.

Further, a full tender process with probity oversight will be in place for all Managing Agency procurement processes. Additionally, acknowledging the potential make-up of the Managing Agency, clear processes will be established to manage any commercial information and/or data that is confidential and/or sensitive to competitors market activities. Annual reviews of the Managing Agency are also to be undertaken by the respective central government department responsible for 'owning' the NZ CRS.

The specific container return scheme legislative instruments are to set a minimum eligible container return rate of 85% target to the NZ CRS with interim annual container return targets (set at the anniversary date of the NZ CRS) of 60%-year-1 (12-months), 65%-year-2 (24-months), 70%-year-3 (36-months), 80%-year-4 (48-months), 85%-year-5 (60-months) set for the first five (5) years of scheme operation. Regulated scheme review periods are to be implemented comprising of two (2) initial scheme review periods to assess scheme performance and operation and strategic direction set at the end of the year-3 and year-5 financial periods, then every 5-years thereafter.

The Managing Agency will establish a clear and consistent collection, quality control and auditing processes integrating all scheme participants to maintain material quality. Additionally, appropriate anti-fraud measures will be implemented such as contractual obligations, auditing and verification and reporting. Fraud mitigation measures will also include a cap on the number of eligible scheme containers returned at any point in time by non-scheme registered individuals. The maximum container return amount will have to be considered across Manual Depots, Automated Depots and Return to Retail with all eligible beverage containers to be registered with the Managing Agency. Further, there is a role for the scheme regulator (i.e., central government agency responsible for the NZ CRS) and/or police in legally enforcing the breaches of the law and regulations where relevant.

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The Managing Agency will contract the scheme Material Consolidation Facility. By exception it may directly own and operate these. The Managing Agency will also have control and/or have full transparency of the end fate of scheme materials via contractual relationships or competitive tendering processes with material re-processors. For clarity, where the processing facility is based on utilising an existing MRF then the contractual arrangement would reflect the appropriate delineation of that site to ensure separation of existing sorting activities and materials from the NZ CRS.

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*Annual reviews of the Managing Agency are also to be undertaken by the respective central government department responsible for 'owning' the NZ CRS.*

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The NZ CRS will provide the consumer with a range of options to receive the deposit refund, including cash, supermarket voucher (including, for example, a 2-year expiration date), donation, electronic funds transfer, other with the scheme Managing Agency having the flexibility to expand the range of refund options. The Managing Agency will also determine whether container return facilities are to provide all or several deposit refund options to the consumer.

Further, the Managing Agency will support the establishment of a revenue sharing arrangement (deposit or handling fee amount, including a transitional period) underpinned by clear guidelines (e.g., the default position could have the deposit shared 50/50 between the two parties making sure no party is disadvantaged nor gains a windfall from the NZ CRS with any surplus returned to the ratepayer) between the local council and the MRF for eligible containers collected via kerbside recycling collections. It is recommended each Territorial Local Authority and MRF operator undertake their own negotiations (excluding the involvement of the Managing Agency) and reach agreement on revenue sharing as this recognises the different contractual arrangements that exist across Aotearoa New Zealand. It is also recommended that local authorities use the opportunity of recognising revenue from containers in the recycling bin to offset recycling collection costs incurred by ratepayers (e.g., realising savings through tendering, including, for example, greater collections per unit truck and recognition of these savings as a variable on customer rates). Further detailed analysis is recommended to determine if the revenue sharing is based on the deposit value or the handling fee, but not both. The default position would be sharing of the deposit value.

Reporting of key scheme performance data will include monthly rolling average data of scheme performance and container return rate targets, or other reporting time period to align with, for example, contractual key performance indicator measures. Social and indigenous procurement elements will be incorporated by the Managing Agency in all relevant scheme related contractual requirements.

The Managing Agency will also be required to promote and develop the refillables market through options including:

- Funding and promoting the benefit and awareness of refillables as a preferred choice to New Zealanders;
- Working with existing Aotearoa New Zealand refillable schemes to identify and remove barriers;
- Investing in infrastructure by addressing barriers such as the return, re-washing and refilling of bottles;
- Ensuring that the method of return by customers is convenient and accessible;
- Establishing NZ CRS container return facilities that can accept, sort and store for transportation both eligible single-use and reusable beverage containers;
- Facilitating the uptake of reusables through the integration of strategic directives embedded within the NZ CRS scheme performance indicators; and
- Securing the funding to achieve the above from the scheme.

This is in alignment with the three (3) key NZ CRS outcomes, which are:

1. Change the way Aotearoa New Zealand values beverage containers that will see increased hangarua - recycling and new opportunities for refilling;
2. Reduce the volume of plastics and other container litter currently ending up in our streams, moana - marine environment, wāhi tūmatanui - public spaces and ruapara - landfills; and
3. Give effect to ōhanga āmiomio - circular economy outcomes and any future priority product guidelines.

## Scheme Governance Board

### The Aotearoa New Zealand Context

The role of the Managing Agency Governance Board is to provide strategic direction to the Managing Agency, ensure the NZ CRS delivers on its goals and objectives, ensure compliance with any bespoke NZ CRS legislative instruments and be accountable to the Government of the day and all scheme participants, including the consumer. The Managing Agency Governance Board will delegate operational matters to the Managing Agency Chief Executive Officer. The Governance Board must also take into



account potential and/or perceived conflicts of interest that may arise from entities or individuals that may stand to profit from the operation of the scheme.

To determine the NZ CRS Governance Board option, seven (7) Managing Agency Governance Board option scenarios were developed with the method of Board appointment specific to the governance option (e.g., Central Government Governance Board to be appointed by the New Zealand Government, such as, the Minister for the Environment). The initial seven (7) identified NZ CRS Managing Agency Governance Board option scenarios identified included:

- Option 1: Central Government appointed;
- Option 2: Local Government appointed;
- Option 3: Industry appointed;
- Option 4: Central Government and Local Government appointed;
- Option 5: Central Government and Industry appointed;
- Option 6: Local Government and Industry appointed; and
- Option 7: Central Government, Local Government and Industry appointed.

Central government was also considered in an observer role on the Managing Agency Governance Board. In this role, central government would have no formal voting rights but would be able to provide input and influence. Additionally, a central government ex-officio arrangement was also considered where central government was a member of the Managing Agency Governance Board by virtue of its role.

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The findings of option scenarios noted most Governance Board members are to be independent, have no material interests in the Managing Agency nor be employees of organisations closely involved with the scheme. Where members are appointed to represent a group, their duty will be to make decisions in the interests of the Managing Agency.

As a result, the NZ CRS Governance Board (including an Independent Board Chair) will be appointed by central government with control through appropriate legislative frameworks. It is proposed that the nomination process as used for the Manatū Mō Te Taiao - Ministry for the Environment Waste Advisory Board be used as the starting point. Further, an odd number of Governance Board members is preferred, to expedite decisions if required and as such the NZ CRS Governance Board will comprise 9-members (including an Independent Board Chair and representation from, for example, industry, recyclers, Iwi, and New Zealanders) and be aligned to the representation of the Te Tai Ōhanga – The Treasury Living Standards Framework (i.e., Natural Capital, Social Capital, Human Capital and Financial/Physical Capital), including upholding Te Tiriti o Waitangi – The Treaty of Waitangi.

Acknowledging there is expected to be a period of time between the NZ CRS Implementation stage and the 'go-live' date of the scheme, central government (i.e., the Manatū Mō Te Taiao - Ministry for the Environment) will be responsible for appointing an Implementation Governance Board, including a Governance Board Chair, to oversee the establishment of the NZ CRS Managing Agency and assist the team tasked with the NZ CRS implementation (e.g., risk and compliance documentation, container return facility toolkit). Central government and the Implementation Governance Board will also appoint an interim Managing Agency Chief Executive to set up the NZ CRS Managing Agency.

The Implementation Governance Board and the interim Managing Agency Chief Executive will be aligned to the representation of Te Tai Ōhanga – The Treasury Living Standards Framework (i.e., Natural Capital, Social Capital, Human Capital and Financial/Physical Capital), including upholding Te Tiriti o Waitangi – The Treaty of Waitangi. Any formal authority granted to the Implementation Governance

Board or the interim Chief Executive will be via the Minister of the day (presumably the Minister for the Environment).

The Implementation Governance Board will be appointed under a temporary basis only, with only the interim Chief Executive having a role on the permanent Managing Agency Governance Board. All other Implementation Governance Board members can be nominated to the Managing Agency Governance Board following, for example, the Manatū Mō Te Taiao - Ministry for the Environment Waste Advisory Board nomination process.

The NZ CRS Governance Board will be supported by a clear mandate that is distinct from the Managing Agency Executive Management Team. The NZ CRS legislative instrument will also set the roles and responsibilities of the Governance Board to provide clarity on scheme delivery expectations.

## Key Findings

The research found that scheme Governance Boards provide a pivotal strategic role in providing direction to the Managing Agency to support the development and continual improvement of the scheme while also being responsible for reporting to the respective government agency on scheme performance – a common requirement of prescribed container return scheme regulations.

The role of the scheme Governance Board in ensuring accountability to stakeholders including consumers is commonly through strategic oversight and performance measures of the Managing Agency, whereas the role of the Managing Agency is to provide visibility and transparency of scheme information, such as financial performance and return rates to scheme participants, including detailed scheme performance reports provided to the Governance Board.

Considering the NZ CRS design, the structural arrangement of the Governance Board will be a critical element in the establishment of a container return scheme that is governed by a balanced group of suitably qualified and experienced members such as strategists. Notwithstanding all other influencing factors, the variability in Governance Board arrangement appears at a high-level to be related to the design of the scheme and whether the design is predominantly based on the 'polluter pays' (i.e., beverage industry incurs the majority of scheme costs) or whether the design is based on passing scheme costs on to the consumer at the point of sale. Consequently, the basis of the scheme design has a resultant broad influence on the Governance Board membership.

The 'polluter pays' design such as the Queensland and Danish scheme case studies, commonly includes a higher proportion of beverage industry representatives to ensure the views of the affected sector are considered and are well represented in the strategic scheme function, compared to lower representation of other sector groups, such as retail, manufacturers, community and the public. The benefit of the Queensland scheme Governance Board is that the beverage industry maintains control and management of the scheme which directly impacts (i.e., financially) on their sector whilst being supported by the scheme Managing Agency to provide the wider stakeholder views and opinions.

Interestingly, the Danish scheme, in acknowledgement of the predominantly beverage industry focussed Governance Board, established a separate legally mandated and independent 'contact group' representing a balanced cross-section of stakeholders, including the public, community, importers, cafés and restaurants. This additional 'contact group' has a similar function to the scheme Governance Board whereby scheme performance, financials, scheme projects, scheme operations, suggested legislated changes are reviewed and critiqued, with feedback provided to the scheme Governance Board to action. While the Danish scheme appears to provide for two (2) forms of a Governance Board, each appears to deliver distinctly different functions focussing on (1) the beverage industry leading the strategic management of the scheme, and (2) the stakeholder 'contact group' critiquing the strategic direction and performance of the scheme while integrating community and public views directly into the schemes governance. The scheme strategically benefits from the integration of both industry and wider stakeholder views and opinions to support its operation and performance.

Where a scheme design is based on visibly passing costs on to the consumer at the point of sale (e.g., deposit, scheme fee, Advanced Material Recovery Fee), the Governance Board commonly comprises representation from the community, consumer, beverage industry, retailers, return facilities and manufacturers, with a similar strategic mandate as discussed in the Queensland and Danish cases above. In the case of Alberta, this broad representation is used to encourage the consumer and community to actively participate in the governance of the scheme alongside representation from industry groups. While a diverse Board membership can at times provide a challenging environment within which to make decisions, diversity amongst the membership can enable more robust decisions to be made based on diversity of knowledge and experience. The benefit of a Governance Board that incorporates a diverse scheme membership is ensuring all scheme participants have an active voice in the strategic governance of the scheme.

Further, the Governance Board commonly supports the scheme Managing Agency through the development of strategic business plans which are set for a period of time (e.g., annual, bi-annual, 3-years, 5-years). The purpose of the business plan is to reflect the schemes strategic direction while including programmes and initiatives to maintain and improve scheme performance with measurable indicators to support environmental, social, cultural and economic outcomes.

In addition to being identified in the business plan, scheme performance measures such as target container return rates are often included in scheme legislative instruments, to provide a measure against which the Managing Agency and/or Governance Board are held accountable. To ensure these targets provide accountability, schemes have been reported to carry out annual surveys of scheme participants, including consumers, to provide clarity on whether the scheme requires a review and/or any amendments, or whether return rates have stagnated, supporting a review of the schemes regulation and/or an increase in deposit level.

Common strategic areas of reporting for the scheme Governance Board can include return rate performance against regulation and previous years data, establishment and development of container return facilities, tracking scheme generated greenhouse gas emissions, scheme employment numbers, distances travelled by material type to end-markets as well as fiscal indicators.

Along with transparency and accountability is the requirement for Governance Boards to ensure appropriate management of scheme finances. Where government agencies are directly involved in the performance of the container return scheme, budgets are either approved by the Government or reported to the government agency by the scheme Governance Board. Where budgets are developed by the Managing Agency, review and approval of these is generally carried out by the Governance Board under a charter reflecting scheme regulatory requirements. While the processes for approving scheme finances was dependent on the scheme design and role of the Managing Agency and Governance Board, Government has an additional significant compliance role to play in both approving and/or scrutinising the financial records of the scheme.

### **Component(s) to be Included in the New Zealand Container Return Scheme Design**

Taking into account the key findings and feedback from the SDWG, the Project Team are of the view that the Governance Board membership and the degree of independence from the Managing Agency is a key NZ CRS design element to provide not only independent (e.g., no conflict of interest) advice and guidance, but importantly, that the Governance Board represents and ensures the views of New Zealanders are captured, integrated and where required used to improve the performance of the scheme to meet and exceed public expectations.

Fundamentally, the mandate of the Governance Board will be to serve all New Zealanders and central government by providing the strategic direction to the scheme and to ensure the ultimate success of the scheme. Consequently, a NZ CRS Governance Board that is structured as distinctly separate from the function of the Managing Agency Executive Management Team, with the exception of the Managing Agency Chief Executive Officer, will provide a balanced, equitable stakeholder representation whilst ensuring the NZ CRS is consumer focussed and that the schemes strategic direction is underpinned by social, economic, cultural and environmental outcomes.

On balance, and acknowledging the feedback received from the SDWG and TAG regarding the Governance Board structure and make-up, the NZ CRS Governance Board (including an Independent Board Chair) is to be appointed by central government with control through appropriate legislative frameworks. The Governance Board will comprise 9-government appointed members (including an Independent Board Chair and representation from, but not limited to, Iwi, recyclers, financial, regulatory, customer, retail, community, waste sector, local government, beverage, experienced strategists and other stakeholders as well as the Managing Agency Chief Executive Officer) and be aligned to the representation of the Te Tai Ōhanga – The Treasury Living Standards Framework (i.e., Natural Capital, Social Capital, Human Capital and Financial/Physical Capital), including upholding Te Tiriti o Waitangi – The Treaty of Waitangi. The benefit of a 9-member Governance Board includes, but is not limited to, the ability for different industry groups to be represented. Notwithstanding the diverse make-up of the governance board, members are selected for the skills and experience and expertise they bring.

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*The requirement for reporting of robust, accurate and consistent information in the NZ CRS design will be vitally important to identify where obligations are not being met by scheme participants and to ensure correct refunds are issued.*

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The scheme Governance Board will provide strategic oversight and direction to the scheme Managing Agency Executive Management Team to support the development and continual improvement of the scheme while also being responsible for reporting to the respective government agency on scheme performance. Additionally, the scheme Governance Board will monitor and oversee the commercial and operational risks of the NZ CRS (e.g., cashflow, fraud mitigation measures).

The roles and responsibilities, including tenure review periods of the scheme Governance Board will be set in the specific container return scheme legislative instruments (e.g., regulations). Acknowledging the potential make-up of the scheme Governance Board, clear processes will be established to manage any commercial information and/or data that is confidential and/or sensitive to competitors market activities. Further, the respective central government department responsible for 'owning' the NZ CRS will carry out annual reviews of the scheme Governance Board.

Managing Agency Governance Board structure must consider conflicts of interest that may arise from entities/individuals that stand to profit/benefit from the operation of the scheme (i.e., entities/individuals are not independent).

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*The mandate of the Governance Board will be to serve all New Zealanders and central government by providing the strategic direction and to ensure the ultimate success of the scheme.*

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Regulated scheme review periods are to be implemented comprising of two (2) initial scheme review periods at the end of the year-3 and year-5 financial periods, then every 5-years thereafter.

The final position on the Governance Board structural arrangement and its legal status will be undertaken during the NZ CRS implementation stage.

## Reporting

### The Aotearoa New Zealand Context

The requirement for reporting of robust, accurate and consistent information in the NZ CRS design will be vitally important to identify where obligations are not being met by scheme participants and to ensure correct refunds are issued. Underpinning reporting requirements is the need to collect

comprehensive data based on clear objectives to ensure data is fit-for-purpose and provides the clarity needed to ensure accurate conclusions are drawn. Further, a bespoke legislative instrument will be required to assist the NZ CRS scheme Managing Agency to enforce the scheme reporting requirements.

Reporting components that will be incorporated into the NZ CRS design include a separate financial accounting system and an Information and Communications Technology (ICT) platform, risk, compliance and auditing requirements of scheme participants, annual surveys of scheme participants, and contractual arrangements to allow the scheme Managing Agency to access container return facilities, the Material Consolidation Facilities and Material Recovery Facilities and obtain information required to measure and manage the performance of the scheme.

Further, to support consumer engagement, confidence and trust in the NZ CRS and visibility of scheme activities, the NZ CRS Managing Agency will ensure full transparency of key scheme performance data.

## Key Findings

The research found that reporting of scheme information is critical for assessing the performance of a container return scheme, and for providing valuable information to both the Managing Agency and Governance Board to assess the appropriateness of continual scheme improvement measures, so as to maintain consumer engagement, ensuring the scheme meets regulatory requirements, and importantly meets the needs and expectations of the consumer. Specifically, robust reporting appears to allow the Managing Agency to undertake the below:

- Track scheme efficiency;
- Identify areas of improvement;
- Minimise fraud;
- End-to-end transactional/chain of custody data and reporting;
- Ensure participants are being compliant with their obligations;
- Ensure correct refunds are calculated and issued;
- Monitor accurate transfer of money as part of the financial flow of the scheme;
- Ensure operational and financial transparency;
- Track operations against scheme quotas, targets and objectives; and
- Publish accurate public information such as container return rates.

The responsibility of scheme participants, including the Managing Agency, is to perform their contractual obligations and report on the data, in the required format and timeframe, as is agreed to in their contractual agreement and in accordance with scheme regulations. A scheme's compliance and audit processes may also require scheme participants to report data at specific timeframe intervals and it is generally the role and responsibility of the Managing Agency, coupled with any specific scheme reporting regulations to determine the details of scheme reporting processes and procedures.

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*The NZ CRS Governance Board (including an Independent Board Chair) is to be appointed by central government with control through appropriate legislative frameworks.*

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For operators of container return facilities, reporting requirements may involve accurate records of the number of eligible containers accepted and/or rejected, the total value of deposits returned to the consumer or total number of eligible containers transported to a Material Consolidation Facility. Where automatic counting systems are used such as Reverse Vending Machines (RVM), data collection is automatically undertaken by the machine and commonly accessible by the Managing Agency. Similarly, where retailers employ an RVM, the collection of data and reporting is undertaken automatically through the electronic systems imbedded in RVMs. If containers are accepted and refunded manually, retailers are required to collect manual information on the empty containers that they collect and refund, and the accounting, drop offs and collections that they may undertake. Where a Material Recovery Facility (MRF) processes scheme material, the facility can be required to record the

receipt, processing, counting, weighing, storage and electronically deliver data of the eligible scheme containers, so that the throughput of this material through the MRF can be tracked and audited. Consumers redeeming a large quantity of containers can be required to complete container declaration forms for container returns over a specified limit. Beverage manufacturers have extensive reporting requirements which are commonly detailed in the regulatory instruments of the schemes. In most situations, they are required to provide monthly sales data. In addition to communication of information to the public, the Managing Agency often publishes public information for producers and scheme operators.

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*Reporting is to include full transparency of key scheme performance data including but not limited to monthly sales data, value of deposits returned to consumers, number of containers collected for each scheme participant.*

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In addition to reporting requirements, container return schemes regulations and contractual obligations often require transparent and auditable records to be maintained and assessed by scheme participants. For beverage producers, the sales data and financial information, such as records of deposits and refunds, are often audited by the Managing Agency. Material Processing Facilities are commonly required to retain transparent data records and undertake internal and independent auditing as and when required by the scheme Managing Agency and/or the respective government. To ensure equality between all scheme participants, the operations of the Managing Agency can also be independently audited. Consequently, scheme reporting requirements are not only undertaken for transparency, but also to improve the operations of the scheme, including the complaint handling process and container return facility management.

The way in which eligible containers are counted has a considerable influence in ensuring accurate reporting of data and the ability to accurately track container return rates. Electronic counting systems, such as RVMs and barcodes allow for data collection and transfer of information to be simplified, instant and virtually guaranteed, and reduces the logistical requirements for operators. Many of the global container return schemes employ a single scheme financial accounting and operational reporting system to manage scheme costs and performance. Diversion calculations are also undertaken across different schemes to determine the resource recovery rates and to assess the performance of the scheme against the recovery rates that were set as targets.

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*Public reporting of key performance data can also increase the community's trust in the scheme and willingness to participate.*

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Public reporting of key performance data can also increase the community's trust in the scheme and willingness to participate. This has also been achieved through participants surveys, which have been extensively used to create well-designed schemes that are based on informed decisions and the needs and experiences of different scheme stakeholders. Surveys carried out during the design stage have been used to understand if the community supports the proposed scheme and the community's general perception of container return schemes. Surveys carried out during the operational stage of the scheme have been used as a mechanism to record and manage faults and provide the informed basis for required changes. Understanding the experiences of the participants is important in order to fix problems where they may occur, ensure continuous satisfaction of participants, and guarantee the continuous success of the scheme. Where scheme revisions were undertaken, participants surveys have helped ensure that consumer concerns were addressed.

## **Component(s) to be Included in the New Zealand Container Return Scheme Design**

Taking into account the key findings and feedback from the SDWG, the Project Team are of the view that the reporting requirements for a NZ CRS will underpin the ability for the Managing Agency and scheme Governance Board to accurately and transparently report on the scheme's performance. As such, the NZ CRS reporting design components will require the development of processes and procedures that reflect the operational differences for each scheme participant. The Managing Agency is anticipated to be responsible for the development of the reporting processes and procedures whilst

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*The NZ CRS reporting design components will require the development of processes and procedures that reflect the operational differences for each scheme participant.*

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being supported and guided by the requirements as set out in the scheme regulations.

Reporting is to include full transparency of key scheme performance data including but not limited to monthly sales data, value of deposits returned to consumers, number of containers collected for each scheme participant. Additionally, a separate financial accounting system and Information and Communications Technology (ICT) platform is to be integrated to manage scheme costs. Annual scheme reports and information are to be transparent and published via scheme websites. Annual surveys of consumer and scheme participants will also be undertaken. Acknowledging the potential make-up of the Managing Agency, clear processes will be established to manage any commercial information and/or data that is confidential and/or sensitive to competitors market activities.

Consistent risk and compliance measures such as auditing of scheme participants will be established such as auditing of scheme participants carried out in a way so as to minimise fraudulent activities. Legislative instruments will also be required to ensure that the NZ CRS Managing Agency is able to access container return facilities, Material Consolidation Facilities and Material Recovery Facilities, and to obtain information required to measure and manage the performance of the scheme.





## SECTION 1: INTRODUCTION

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## Section 1 Introduction

On the 25<sup>th</sup> September 2019, the Associate Minister for the Environment the Honourable Eugenie Sage announced<sup>2</sup> progression of the development of a container return scheme for Aotearoa New Zealand. Acknowledging the approximate forty (40) Container Return Schemes operating globally including the majority of states in Australia, project approval for the design of a bespoke Aotearoa New Zealand Container Return Scheme (NZ CRS) was given in November 2019.

The intent of the design process was to develop the best scheme based on best international practice, that was bespoke to Aotearoa New Zealand and developed in alignment with social, cultural, economic and environmental scheme outcomes.

To facilitate the design, representatives from kaitiakitanga whakanaonga - product stewardship groups, Mana Whenua, beverage producers (non-alcohol and alcohol), packaging and recycling industries, local authorities, charitable organisations, retailers, recyclers (collectors, processors and community/social enterprises), consumer advocacy, container manufacturers and rangatahi - youth were engaged through a Scheme Design Working Group (SDWG) to ensure collective views and considerations were received and integrated where possible in the design of the NZ CRS.

The outcome of the process will be a comprehensive and bespoke 'Aotearoa' NZ CRS design ready for implementation pending government approval.

This report provides a detailed assessment of a range of global container return schemes as well as feedback received from the SDWG which have been used to help inform and shape the design of the bespoke NZ CRS.

This section provides an overview of the NZ CRS project, including the scope, aims and objectives, assumptions and limitations as well as the methodology used to arrive at the bespoke NZ CRS design as summarised in Section 18.

### 1.1 Background to this Project

Container return schemes already operate throughout the world in countries such as Germany, Lithuania, Australia, United States of America, Canada and Norway, with other countries such as Singapore now progressing to establish a suitable container return scheme for their respective economy and society. While each container return scheme is unique, each is designed based on key drivers, the political environment at the time and which typically include scheme objectives such as encouraging greater recycling of containers and to give effect to circular economy outcomes (i.e., transitioning from a linear economy to a circular economy).

#### CIRCULAR ECONOMY – ŌHANGA ĀMIOMIO

"TODAY'S ECONOMY IS MASSIVELY WASTEFUL. MOST OF THE MATERIALS WE USE, WE LOSE, THE THINGS WE MAKE ARE CONSISTENTLY UNDERUTILISED, AND OUR EFFORTS TO FIX IT TREAT THE SYMPTOMS, NOT THE CAUSE."

ANDREW MORLET, EXPERT ON THE CIRCULAR ECONOMY

[WWW.MFE.GOV.TZ](http://WWW.MFE.GOV.TZ)

Internationally, there are over forty (40) container return schemes with Adelaide, South Australia claiming the longest running scheme at 42-years and reporting an overall return rate of 76.4% (source: [www.epa.sa.gov.au](http://www.epa.sa.gov.au)). While Aotearoa New Zealand does not yet have a national Container Return

<sup>2</sup> <https://www.beehive.govt.nz/release/work-underway-beverage-container-return-scheme>

Scheme (NZ CRS) in place, the country can claim experience in the establishment and running of an informal glass only collection and return system which was in operation between the 1950s and 1980s.

While there are differing opinions about the practicality of a NZ CRS, 83% of New Zealanders support the establishment of a NZ CRS with 90% of Local Government New Zealand (LGNZ) endorsing<sup>3</sup> a nationally mandated NZ CRS to be in place within a 2-year period.

Further, the current level of beverage and other container recovery is moderate and of varying quality across Aotearoa New Zealand with recycling rates of all current beverage containers (i.e., glass, cans, plastic) between 45-58%<sup>4</sup>. This has resulted in the loss of valuable resources to disposal pathways, such as ruapara - landfill and to the taiao - environment with challenges associated with current container recovery in Aotearoa New Zealand including:

- Lack of equity of service provision across the country;
- Reliance on municipal collection and processing systems;
- Disconnect between production, consumption and end-of-life treatment of containers;
- Uncertain commodity markets;
- Limited onshore processing capacity; and
- Limited value of the container.

With the implementation of a NZ CRS the recycling rates are expected to increase from between 45-58% to between 79-82%, have a subsequent reduction in the amount of litter and provide a range of social, environmental, cultural and economic benefits, for example, job creation, industry growth and innovation, improved public awareness and engagement in resource efficiency initiatives<sup>5</sup>.

## 1.2 Scope of this Report

The scope of the NZ CRS design process provides for the collection of a range of beverage containers with a national coverage. To achieve this, the development of a NZ CRS design involved the following key design elements:

- Scope of the NZ CRS, including material types, container sizes, extent of national coverage, and conditions of acceptance.
- The institutional arrangements including governance structures, organisational roles and responsibilities, reporting requirements, financial accountability and risk (fraud) management controls.
- The financial system necessary to support a scheme. As appropriate this could include the level and mechanism of the deposit-refund, materials ownership, handling, transport and administration fees and processes for review.
- The container material flows and logistics necessary to enable a scheme. As appropriate this could include transport, container return facilities, take back requirements, processors, manufacturers, integration with existing infrastructure and any other logistical or capacity aspect of the scheme.
- The establishment and infrastructure investment requirements to support the scheme.
- The overall costs and benefits of the scheme design, including key stakeholder groups.

<sup>3</sup> <http://www.wasteminz.org.nz/wp-content/uploads/2017/12/Container-Deposit-Scheme-Summary-Report-Final.pdf>

<sup>4</sup> <http://www.wasteminz.org.nz/wp-content/uploads/2017/12/Container-Deposit-Scheme-Summary-Report-Final.pdf>

<sup>5</sup> <http://www.wasteminz.org.nz/wp-content/uploads/2017/12/Container-Deposit-Scheme-Summary-Report-Final.pdf>

- Potential scheme targets and incentives necessary to drive and achieve key outcomes (e.g., accessibility targets, container recovery rates).
- The proposed regulatory/legislative requirements necessary to establish a scheme.
- Next steps required to implement the proposed design.

The scope of this NZ CRS Design Report is to summarise and document the research undertaken to determine the key items for inclusion in the design of a bespoke NZ CRS.

The key elements considered during the research process included the following:

- Assess the overall feasibility of a scheme in the Aotearoa New Zealand context;
- Conduct in-depth literature reviews of models and effectiveness of existing international container return schemes, for example, Australian State container return schemes;
- Provide an adequate and appropriate cost benefit analysis in order to inform the NZ CRS design, including ensuring the costs and benefits are fairly distributed across Aotearoa New Zealand (e.g., rural/urban, ratepayers/consumers, industry/local authorities, community groups);
- Determine best practice container collection methods for optimal recovery rates and the ability to have wider social and environmental benefits;
- Determine sustainable economic opportunities that are aligned to quality employment opportunities;
- Availability of end-markets;
- Opportunities for container material rationalisation; and
- Consideration of the consequences of container placement in the marketplace.

To achieve the above, a NZ CRS Project Team was established to work in an open and collaborative way to bring together expertise from a range of stakeholders (including the SDWG) to inform the NZ CRS design body of work. This information has been collated and presented in this report with a series of conclusions and recommendations wrapped up at the end of the report, including recommended steps to progress the NZ CRS design to the implementation stage. The report also includes, where appropriate, how the design recommendations fit within the existing legislation whilst also considering the General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020. It is though, acknowledged that the development of a bespoke NZ CRS legislative instrument may be required to provide the necessary clarity to all scheme participants on their respective roles, responsibilities, and importantly, requirements of the scheme to meet consumer expectations. It is also acknowledged that a detailed legal assessment will be required during the NZ CRS implementation stage to ensure all legal components have been addressed and accounted for in the bespoke NZ CRS legislative instrument to support the implementation of the NZ CRS and the ultimate success of the scheme.

### 1.3 The New Zealand Container Return Scheme Aims and Objectives

The design of a bespoke Aotearoa New Zealand Container Return Scheme (NZ CRS) was based on the following three (3) key project outcomes:

1. Change the way Aotearoa New Zealand values beverage containers that will see increased hangarua - recycling and new opportunities for refilling;
2. Reduce the volume of plastics and other container litter currently ending up in our streams (i.e., awa – waterways), moana - marine environment, wāhi tūmatanui - public spaces and ruapara - landfills; and
3. Give effect to ōhanga āmiomio - circular economy outcomes and any future priority product guidelines.

## 1.4 The New Zealand Container Return Scheme - Assessment Methodology

This section discusses the process undertaken to design the bespoke NZ CRS.

### 1.4.1 Designing a Container Return Scheme

As discussed in Section 1.3, to achieve the project aims, the NZ CRS design has considered, and where possible, has given effect to the following key guiding design principles:

- Make it easy and convenient to return containers across Aotearoa New Zealand;
- A solution that is cost effective and efficient;
- Improve the quality and marketability of recyclables and assess the impact of the NZ CRS design on current kerbside and other collection and processing systems; and
- Create new opportunities for employment, community participation and fund-raising for charities and social enterprises.

In addition to these key guiding design principles, the NZ CRS design process has, where possible, given effect to the following design elements:

- Use technology and innovations to optimise performance of the NZ CRS;
- Support greater investment in remanufacturing and regional development;
- Align objectives with Te Tiriti o Waitangi - the Treaty of Waitangi and Te Ao Māori; and
- Where able mitigate climate change.

The following sections provide a summary of the design methodology employed to develop the bespoke NZ CRS design (see Section 18).

### 1.4.2 Part 1 – In-depth Research of Global Container Return Schemes

Designing the best bespoke NZ CRS must be based on an objective, impartial approach. This included a review of global container return schemes within their respective jurisdictions including a broad understanding of the legislative context. Alongside the global review and where information was publicly available at the time of writing, a review of the Aotearoa New Zealand sectors and industries likely to be impacted by a NZ CRS and how a NZ CRS can effectively integrate within the Aotearoa New Zealand environment was carried out in parallel to assess the key design principles as discussed earlier in Section 1.2.

To achieve this, this NZ CRS design was developed by undertaking a combination of document analyses and interrogation of data complemented by contact with a range of container return scheme (CRS) specialists from around the globe. The outcomes of this work are presented in the following sections concluding in a series of key design components and finally the culmination of this information into the bespoke NZ CRS design.

### 1.4.3 Part 2 – In-depth New Zealand Stakeholder Feedback

The design of the NZ CRS was achieved through a collaborative and iterative process with review and input from the SDWG and a wide range of key stakeholders. In addition to the SDWG, a Technical Advisory Group (TAG) with an Independent Chair was appointed to provide expert input and guidance during the design process.

Further, the design of a bespoke NZ CRS was achieved through a best practice collaborative and constructive process, enabling stakeholders the opportunity to provide constructive design feedback.

The intent of the in-depth stakeholder review process was to identify opportunities, challenges and perceptions regarding specific groups of stakeholders and to synthesise and distil this information into key matters for design consideration.

The benefit of such a process was to ensure the NZ CRS design process was informed and aligned with those that a scheme will affect whilst giving stakeholders confidence that the design outcome considered a range of views. However, as with many design processes, it was acknowledged that not all suggestions and expressed views are shared by all and that there was at times the need for compromise.

Acknowledging the large number of stakeholders likely to be affected by the implementation of a NZ CRS, the stakeholder consultation process provided an opportunity for a wide range of stakeholders including but not limited to key industry groups, businesses, community organisations, government agencies and Māori to input into the design.

Recognising the number of affected and interested stakeholders and ensuring consolidated views were captured, the consultation process focused on communication with key representatives from across a range of groups. This group of key representatives comprised the Scheme Design Working Group (SDWG), established to actively contribute to the development of the NZ CRS design. The SDWG comprised the following key representative groups:

- Recyclers (collectors, processors, community/social enterprise).
- Beverage producers (non-alcohol and alcohol, dairy).
- Retailers (supermarkets, fast food, shopping malls).
- Charitable organisations.
- Local authorities.
- Mana Whenua.
- Consumer advocacy (Consumer NZ).
- Kaitiakitanga whakanaonga - Product stewardship groups.
- Manatū Mō Te Taiao - Ministry for the Environment (MfE).
- Rangatahi - Youth.
- Container manufacturer.

The purpose of the SDWG was to work collaboratively with their respective groups and ensure the representative views of each group member were identified and taken into consideration by the NZ CRS Project Team when making recommendations on the NZ CRS design.

To support this process, the SDWG received from the NZ CRS Project Team four (4) Research Tranches comprising a detailed synthesis of the research undertaken on the specific design components, key research findings and the components to be taken forward to the design of the NZ CRS. To facilitate a co-designed NZ CRS, each SDWG member provided feedback on each research section comprising the four (4) Research Tranches for the NZ CRS Project Teams consideration.

In addition to the SDWG, the NZ CRS Project Team engaged with a wide range of national stakeholders not represented on the SDWG to ensure a broad range of views and insights were captured.

Alongside national stakeholders, consultation with a wide range of international stakeholders including global container return schemes, international organisations, government departments, groups and individuals was undertaken to ensure in-depth information and insights were obtained. A detailed survey of Australian container return schemes was also undertaken, the results of which have been used to inform the NZ CRS design.



Figure 1: New Zealand Container Return Scheme Design Stakeholder Feedback Process

### 1.4.4 Part 3 – Financial Modelling Process

To understand the scheme financials, a financial model was prepared to inform and support the NZ CRS design process by forecasting volumes and cash flows associated with the scheme and its broader industry impacts. Model development followed a process of model design, information gathering, formation of assumptions, model build and refinement, review, analysis and documentation. Due to the ongoing research developments and feedback received during the NZ CRS design process, the model was continually updated to reflect these outcomes facilitating a refined model reflecting the design of the NZ CRS.

Key outputs from the financial model included forecasted container sales and return volumes, scheme establishment and operating costs, Managing Agency cash flows, container return facility cash flows, consumer impacts, and broader recycling and waste industry impacts. As a result, the financial model allowed for scenario analysis and a sensitivity analysis to test the impact of changes in key assumptions and scheme design choices.

The following schematic illustrates the financial modelling process.

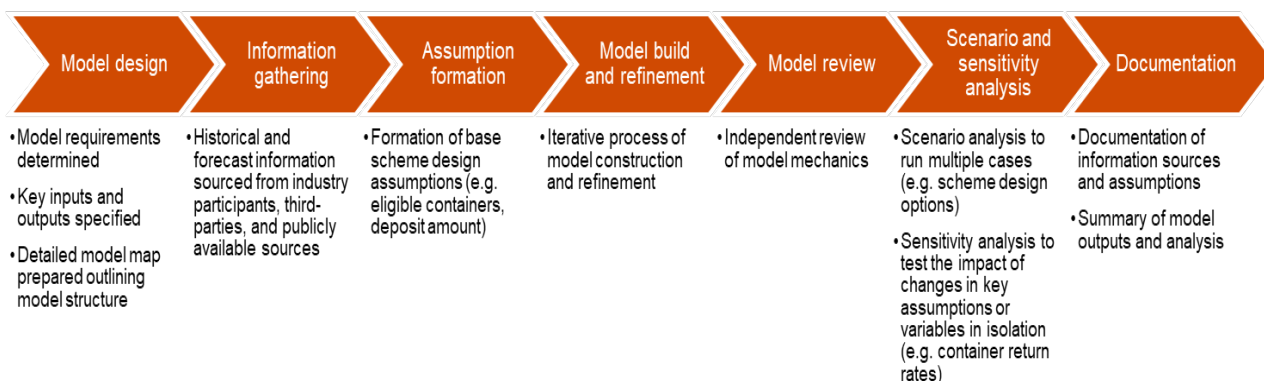


Figure 2: Schematic illustrating the financial modelling process



## 1.5 Assumptions and Limitations

The following assumptions and limitations apply to this report and the design of the NZ CRS:

- All information, including data, reports and maps have not been used to inform the outcomes of the research process including the development of the key design components;
- Where extrapolation of limited data sets has been undertaken, various assumptions have been applied and noted;
- All site visits undertaken during the project timeframe provide a snapshot in time only;
- Section 2.1.2 does not preclude the addition of new, or changes to, existing Government policy (e.g., plastics), legislation or regulations that may influence the design of the NZ CRS.

## 1.6 Structure of this Report

This NZ CRS Design Report is structured into eighteen (18) discrete sections each representing an important building block in the design of the bespoke 'Kiwi' Container Return Scheme. This report brings together evidence-base and expert opinion culminating with the NZ CRS design and next steps toward implementation.

Each section comprises a discrete design topic providing a summary of the international and national research findings specific to that subject area whilst considering the Aotearoa New Zealand environment (including the economic, social, cultural and environmental pillars).

- Section 1 – Introduction
- Section 2 – New Zealand Container Return Scheme – Setting the Scene
- Section 3 – Scope of Containers
- Section 4 – Container Return Facilities
- Section 5 – The Retailer
- Section 6 – The Consumer
- Section 7 – Material Processing Facilities
- Section 8 – The Material Re-Processor
- Section 9 – The Container Manufacturer
- Section 10 – The Beverage Producer
- Section 11 – Scheme Financials
- Section 12 – Extended Producer Responsibility and Kaitiakitanga Whakanaonga - Product Stewardship
- Section 13 – Legal Framework
- Section 14 – Scheme Managing Agency Organisational Form
- Section 15 – Scheme Governance Board
- Section 16 – Reporting
- Section 17 – The New Zealand Container Return Scheme - Looking Ahead to Implementation
- Section 18 – The New Zealand Container Return Scheme Design
- Section 19 – References

## 1.7 Summary

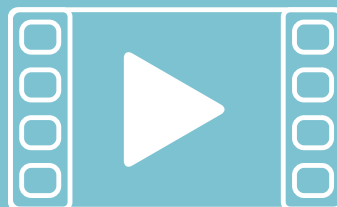
This NZ CRS Design Report sets out the requirements for a national container return scheme that is fit-for-purpose and bespoke to Aotearoa New Zealand.

By engaging with a wide range of stakeholders and organisations, the NZ CRS design recommended in this report will provide Aotearoa New Zealand with a solution that engages with society and industry and is designed for the benefit of all New Zealanders.



SECTION 2:  
THE NEW ZEALAND  
CONTAINER RETURN SCHEME -  
SETTING THE SCENE

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## Section 2 The New Zealand Container Return Scheme - Setting the Scene

The global waste market is changing at a rapid pace with many products (e.g., aluminium and plastics) combined in end-of-life products (e.g., foil barriers in plastic food packaging) which without adequate technology to separate the material types can lead to contamination of commodity products and/or disposal to the taiao - environment or ruapara - landfill. Products are also becoming lighter with less material being used: cans becoming lighter, less aluminium foil used in food packaging, which from an environmentally sustainable standpoint is beneficial, however adequate technology is needed to separate, collect and recycle the material from the end-of-life products.

Plastic waste is becoming a major commodity used in end-of-life products on a global scale. Plastic has become a major part in almost every part of day-to-day life, with products once packaged in glass bottles (e.g., Aotearoa New Zealand milk deliveries) now packaged in plastic bottles. Historic data suggests plastic production has outpaced almost every other manufactured material from 2 million metric tonnes (Mt) produced in 1950 to 322million Mt in 2015.

While plastic is known to be a very durable and useful product for use in packaging (e.g., extending shelf life, greater marketing opportunities, transport efficiencies), it is also known that plastic packaging has become a key environmental issue with many single-use packaging items either breaking down (e.g., microplastics) in the taiao - environment or becoming part of the litter stream (e.g., single-use containers). It has been reported that 6.3billion Mt of plastic waste is generated worldwide with only 9% recycled globally. Much of the non-recycled plastic is either landfilled or ending up in the taiao - environment (approximately 80%), with an estimated 4million – 12million Mt of plastic waste entering the moana - oceans annually<sup>6</sup>.

The establishment of global container return schemes has been a key initiative in assisting governments move from a linear economy to ōhanga āmiomio - circular economy where manufactured products are used and then returned, with the overall aim to reduce the amount of waste entering our taiao - environment (Figure 3).

*Container return schemes has been a key initiative in assisting governments move from a linear economy to ōhanga āmiomio - circular economy*



Figure 3. Description of linear versus circular economies<sup>7</sup>

In the Aotearoa New Zealand context, the transition from a linear economy to ōhanga āmiomio - circular economy aligns with mātauranga Māori to protect and uphold the mauri of Papatūānuku.

<sup>6</sup> Brooks, A, L., Wang, S., Jambeck, J. R. (2018). The Chinese import ban and its impact on global plastic waste trade. *Sci. Adv.* 2018;4:eaat0131.

<sup>7</sup> <https://www.mfe.govt.nz/waste/we-all-have-role-play/responsible-product-management/about-product-stewardship>

## 2.1 The Aotearoa New Zealand Context

The Organisation for Economic Co-operation and Development (OECD) notes Aotearoa New Zealand as one of the highest producers of municipal waste in the OECD (Figure 4). Data reported by the OECD in 2014, noted the Aotearoa New Zealand kilogram per capita municipal waste<sup>8</sup> was approximately 640kg/capita, with a significant increase in 2017 to approximately 740kg/capita<sup>9</sup> – an increase of approximately 99kg/capita in 3-years.

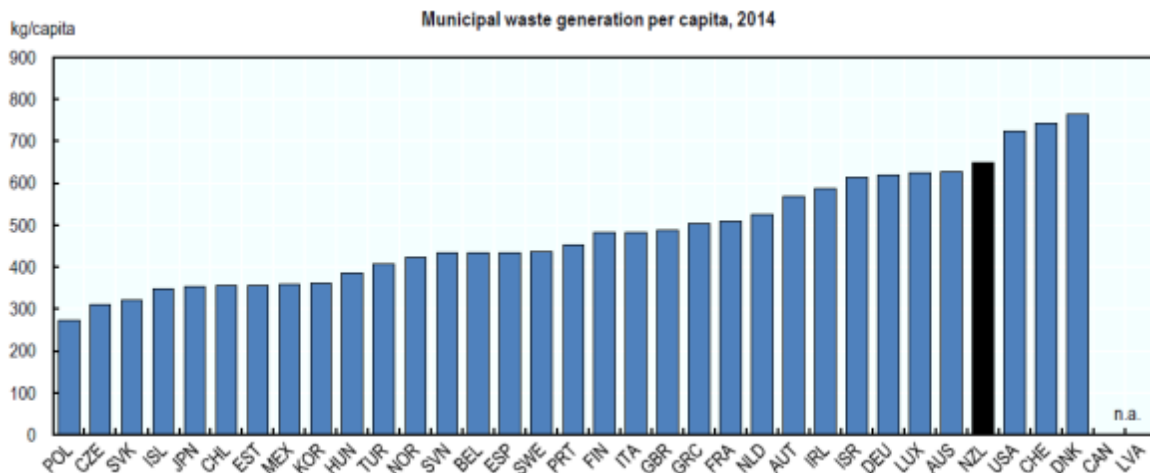


Figure 4: Municipal waste generation per capita (2014)<sup>10</sup>

The amount of waste produced in Aotearoa New Zealand<sup>11</sup> is a major problem and the recent global effects of increased restrictions on our exported recyclable products will continue to place pressure on our ability to collect and produce material to meet international quality standards.

A recent Manatū Mō Te Taiao – Ministry for the Environment funded survey carried out by Keep New Zealand Beautiful (KNZB)<sup>12</sup> using internationally approved methodology with data meeting environmental reporting requirements of the Ministry and Stats NZ aimed to help fill an information gap in the knowledge around the amount and type of litter found throughout Aotearoa New Zealand. Notwithstanding the outcomes of other Aotearoa New Zealand litter surveys, the high-level results of the KNZB survey that are of particular relevance to the NZ CRS are presented here. The KNZB investigation assessed the type and quantity of waste material within the extrapolated litter stream with plastic, metal and glass the predominant material groups of relevance to a NZ CRS. KNZB surveyed 413 sites (average site size of 1,156m<sup>2</sup>) with a mix of urban and rural sites comprising from across thirteen (13) regions across Aotearoa New Zealand:

*To help reduce the amount of waste produced, the New Zealand Government is encouraging producers, brand owners, importers, retailers and consumers to take greater responsibility to transition from a linear to ōhanga āmiomio - circular economy.*

<sup>8</sup> Municipal waste is defined as waste from households, including bulky waste, similar waste from commerce and trade, office buildings, institutions and small businesses, as well as yard and garden waste, street sweepings, the contents of litter containers, and market cleansing waste if managed as household waste. The definition excludes waste from municipal sewage networks and treatment, as well as waste from construction and demolition activities.

<sup>9</sup> <https://data.oecd.org/new-zealand.htm>

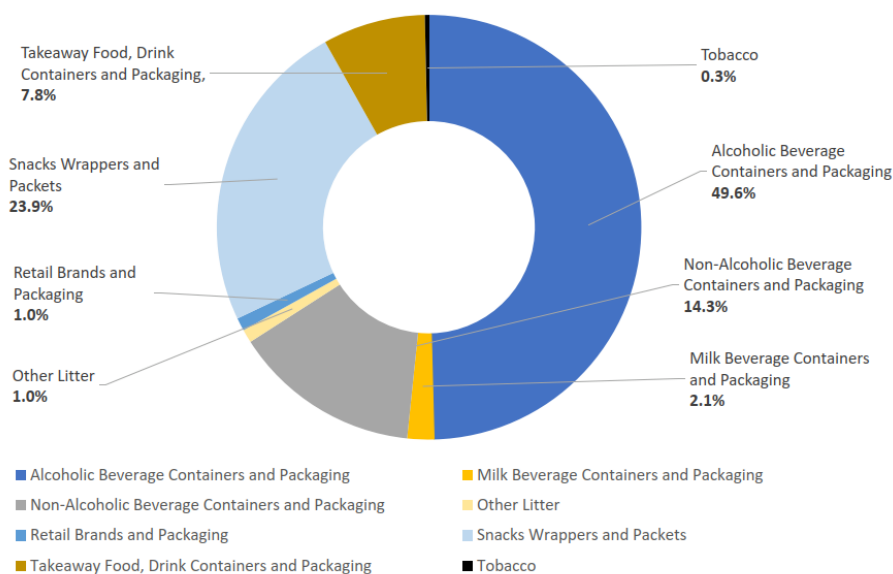
<sup>10</sup> [https://www.oecd.org/environment/country-reviews/Annexes\\_NZL%20web.pdf](https://www.oecd.org/environment/country-reviews/Annexes_NZL%20web.pdf)

<sup>11</sup> <https://www.mfe.govt.nz/publications/waste/reducing-waste-more-effective-landfill-levy-consultation-document>

<sup>12</sup> Keep New Zealand Beautiful National Litter Audit, September 2019

- Public and recreational spaces;
- Car parks;
- Industrial;
- Residential;
- Retail;
- Highways; and
- Railways.

Litter was categorised into eight (8) main material types and were reported against a 1,000m<sup>2</sup> site area to enable robust comparisons of litter across material types and national sites. Of the main material types reported, cigarette butts/vaping was reported as the most prevalent litter item nationally (39 butts per 1,000m<sup>2</sup>), however plastic items (e.g., drink pouches, milk containers, soft drink bottles, plastic bags) contributed 29 items per 1,000m<sup>2</sup> followed by paper/cardboard (15 items), metal (14 items) and glass (12 items). Further, the KNZB survey also included a survey of branded litter which included any item with a recognisable brand name or logo printed on it. Of the identifiable branded beverage containers (i.e., any item with a recognisable brand name or logo printed on it and of most relevance to the NZ CRS) recorded by industry category, alcoholic beverage containers and packaging represented the largest proportion by weight (49.6%) followed by snack wrappers and packets (23.9%), non-alcoholic beverage containers and packaging (14.3%), takeaway food drink container and packaging (7.8%) and milk beverage containers and packaging (2.1%) (Figure 5).



**Figure 5: Branded Litter by Industry Category<sup>13</sup>**

To help reduce the amount of waste produced, Manatū Mō Te Taiao - Ministry for the Environment has noted Kaitiakitanga Whakanaonga - Product Stewardship will help to transition from a linear economy to ōhanga āmiomio - circular economy, which involves producers, brand owners, importers, retailers and consumers taking greater responsibility for reducing a product's environmental impact<sup>14</sup>. Alongside this kaupapa and transition is the need to assess current onshore processing infrastructure to support such a transition.

<sup>13</sup> National Litter Audit, September 2019. Keep New Zealand Beautiful

<sup>14</sup> <https://www.mfe.govt.nz/waste/product-stewardship-responsible-product-management/about-product-stewardship>

### 2.1.1 Waste and Resource Management Industry

While there is no Container Return Scheme in Aotearoa New Zealand to date, the Government acknowledges the need for co-designed kaitiakitanga whakanaonga - product stewardship schemes to help design waste out of our economy and transition from a linear economy to ōhanga āmiomio - circular economy. Alongside government guidelines such as the General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020s, the design of a NZ CRS will help to place a value on containers, reduce the volumes of glass and other container litter and increase the opportunities for refilling. The implementation of a NZ CRS will also give effect to ōhanga āmiomio - circular economy outcomes and any future priority product guidelines.

*In most cases, local authorities carry the responsibility and risk associated with the collection (including contamination) and fate of materials collected (e.g., glass, plastics, fibre, metal)*

Across Aotearoa New Zealand's 67 territorial authorities a range of kerbside collection services exist with limited consistency between regions with many local authorities having bespoke collection arrangements. In most cases, local authorities carry the responsibility and risk associated with the collection (including contamination) and fate of materials collected (e.g., glass, plastics, fibre, metal). In addition, the ownership of commodity products varies dependent on the contractual arrangement and may include, council ownership, Material Recovery Facility (MRF) ownership or shared ownership between council and the MRF.

There are significant challenges within Aotearoa New Zealand regarding recycling of products influenced in part by the geographical separation of Te Ika-a-Maui - the North Island and Te Waka-o-Maui – the South Island and factors such as transportation of products from source to processor/manufacturer. For example, at present O-I Glass is the only organisation in Aotearoa New Zealand managing glass production from sources from Waihōpai - Invercargill to Te Tai Tokerau - Northland.

*There is now growing awareness and recognition that the economy must transition from a linear to ōhanga āmiomio - circular (make-use-return) economy.*

Understanding the complexities within the Aotearoa New Zealand waste and resource management industry is essential to the design and implementation of a NZ CRS, as is an understanding of the geographical issues associated with transportation. For example, within Aotearoa New Zealand, the Zero Waste Network connects, educates and enables community enterprises including Resource Recovery Centres (RRCs) to work towards ōhanga āmiomio - circular economy outcomes. Consequently, the geographical spread of Aotearoa New Zealand's RRCs may provide an opportunity to minimise current transportation costs of recycled products and/or provide localised bulking or processing of products whilst creating employment and social opportunities (see Section 4 for further discussion).

The cost of landfill disposal has also had an influence on product recovery with disparity amongst the national cost of ruapara - landfill disposal (i.e., \$200-\$280/tonne to \$50/tonne) resulting in disparate behaviours by the waste industry and different levels of investment throughout the country. With the New Zealand Government confirming plans to increase and expand the national waste disposal levy to divert more material from landfill recognising the ever-increasing amount of waste ending up in Aotearoa New Zealand's landfills<sup>15</sup>. Consequently, increased investment in alternatives to landfill disposal is anticipated in keeping with the objectives of the Waste Minimisation Act 2008.

*There are significant challenges within Aotearoa New Zealand regarding recycling of products influenced in part by the geographical separation of the North and South Island and factors such as transportation of products from source to processor/manufacturer.*

### 2.1.2 Aotearoa New Zealand Waste Legislative Framework

The Manatū Mō Te Taiao - Ministry for the Environment has noted that the take-make-dispose use of products has created a linear economy and that ōhanga āmiomio - circular economy is an alternative to

<sup>15</sup> <https://www.mfe.govt.nz/waste/waste-and-government>



this approach where a product is designed for the longest use possible<sup>16</sup>. Globally, there is growing awareness and recognition that economies must transition from a linear (make-use-dispose) economy to *ōhanga āmiomio* - circular (make-use-return) economy. Recent international market changes including restrictions by China on the importation on waste and recyclables has highlighted the need to take a closer look at the way Aotearoa New Zealand manages its waste, including current onshore processing and recycling. To achieve this, the New Zealand Government has established and enacted several key legislative documents that set the requirements for waste minimisation and management. In addition, the New Zealand Government has ratified several international agreements to manage Aotearoa New Zealand's impact on the global waste sector. The following sections outline the national and international legislation and agreements that could influence the design and implementation of a NZ CRS (see Section 13 for further discussion).

### 2.1.2.1 Central and Local Government Legislation and Regulations

To manage waste and assist in the transition from a linear economy to *ōhanga āmiomio* - circular economy, a series of central and local government legislation and regulations set the expectations and requirements to enable and facilitate this process, including the establishment of the New Zealand Waste Strategy – the overarching framework for managing and minimising waste.

*Along with international drivers including the China National Sword and the COVID-19 global health pandemic impacts on the recycling markets, there is now growing awareness and acceptance that countries must look at reducing the impacts of manufactured products on our environment through *ōhanga āmiomio* a circular (make-use-return) economy*

Since 2002, the New Zealand Waste Strategy ('the Strategy') has provided direction to local government, businesses (including the waste industry) and communities to manage and deliver environmental, social and economic benefits to New Zealanders. An update in 2010 set the following strategic goals to provide greater flexibility for waste management and minimisation:

- Reduce the harmful effects of waste; and
- Improve the efficiency of resource use.

To give effect to the Strategy, three (3) primary legislative Acts provide the drivers to enable waste management and minimisation in Aotearoa New Zealand:

1. The Waste Minimisation Act 2008 (WMA).
2. The Local Government Act 2002.
3. The Resource Management Act 1991 (RMA).

#### Waste Minimisation Act 2008 (WMA)

The Waste Minimisation Act 2008 (WMA) was established to provide a regulatory framework to encourage the reduction in the amount of waste produced and disposed of by New Zealanders with the aim to reduce environmental effects whilst generating economic, social and cultural benefits. The WMA provides for several tools to manage and minimise waste, including:

*To manage waste and assist in the transition from a linear to *ōhanga āmiomio* - circular economy, a series of central and local government legislation and regulations set the expectations and requirements to enable and facilitate this process,*

- Recognition of central government accredited *kaitiakitanga whakanaonga* - product stewardship schemes and the ability for central government to impose mandatory *kaitiakitanga whakanaonga* - product stewardship schemes for the six (6) declared priority products;
- Clearer waste management responsibilities for territorial authorities, including implementation and review of waste management and minimisation plans (WMMPs);
- Implementation of a waste levy of \$10/tonne (plus GST) (as at 2019) on waste disposed of at disposal facilities to be used for funding of waste minimisation activities (via the Waste

<sup>16</sup> <https://www.mfe.govt.nz/waste/circular-economy>

Minimisation Fund). An increase to the municipal landfill levy announced by MfE in 2020 from \$10/tonnes set in 2009 to \$20 by 01 July 2021, \$30 by 01 July 2022, \$50 by 01 July 2023 and \$60 by 01 July 2024 and extending the levy to cover additional landfill types including industrial and construction and demolition fills (but not cleanfills or farm dumps)<sup>17</sup>;

- Give central government the power to make regulations to collect information and to impose standards for various aspects of waste minimisation;
- The Minister for the Environment may recommend to make regulations, for example, for the control or prohibition on disposal, sale, etc; take-back services, fees and refundable deposits; labelling of products; quality standards; information to be collected and provided; miscellaneous (Section 23 of the WMA); and
- Establishment of the Waste Advisory Board to provide independent advice to the Minister for the Environment on matters relating to the Act and waste minimisation, including also consideration of tikanga Māori (Section 93, 5.f of the WMA).

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*The Waste Minimisation Act (2008) was established to provide a regulatory framework to encourage the reduction in the amount of waste produced and disposed of by New Zealanders with the aim to reduce environmental effects whilst generating economic, social and cultural benefits.*

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Part 2 of the WMA is centred on kaitiakitanga whakanaonga - product stewardship, where the purpose:

*“is to encourage (and, in certain circumstances, require) the people and organisations involved in the life of a product to share responsibility for:*

- Ensuring there is effective reduction, reuse, recycling, or recovery of the product; and*
- Managing any environmental harm arising from the product when it becomes waste.”*

It also sets out the conditions associated with kaitiakitanga whakanaonga - product stewardship schemes for declared priority products, including the accreditation of kaitiakitanga whakanaonga - product stewardship schemes that have been developed for a non-priority product including the ability to make potentially relevant regulations whether or not priority products.

### Priority Products and Product Stewardship Scheme Guidelines

Aotearoa New Zealand has one of the highest rates of household waste production per capita in the OECD<sup>18</sup>. Many of the products used for every-day life are often designed with limited thought for the huringa mataora – life-cycle of the product meaning the majority of products currently produced and the behaviours by which consumers purchase and use these products is linear (take-make-dispose) in nature. Along with international drivers including the China National Sword and the COVID-19 global health pandemic impacts on the recycling markets, there is now growing awareness and acceptance that countries must look at reducing the impacts of manufactured products on our taiao - environment through ōhanga āmiomio -a circular (make-use-return) economy. To help progress this transition, the New Zealand Government is encouraging producers, brand owners, importers, retailers and consumers to take greater responsibility to transition from a linear economy to ōhanga āmiomio - circular economy. This might include improved recovery potential of products, designing products that have greater recycled content or ensuring there is a responsible means of recycling of a product.

To facilitate the economy moving towards greater efficiency and less environmental harm, the government established the WMA which includes a range of measures to encourage a reduction in the amount of waste generated in Aotearoa New Zealand.

The WMA defines ‘producer’ as a person who:

- Manufactures a product and sells it in New Zealand under the person’s own brand; or

<sup>17</sup> <https://www.mfe.govt.nz/waste/waste-and-government>

<sup>18</sup> <https://www.mfe.govt.nz/consultations/priorityproducts>

- b) Is the owner or licence holder of a trademark under which a product is sold in New Zealand; or
- c) Imports a product for sale in New Zealand; or
- d) Manufactures or imports a product for use in trade by the person or person’s agent (Section 5 of the WMA).

Similarly, the WMA defines a ‘product’ as including both packaging and a class of product.

The New Zealand Government recognises that continued progress is needed to transition from a linear economy to *ōhanga āmiomio* - circular economy with measures such a voluntary and regulated *kaitiakitanga whakanaonga* - product stewardship for priority products. The WMA has several functions to facilitate this transition, including<sup>19</sup>:

- Bans of specific products – Aotearoa New Zealand has recently enacted the WMA to ban two products to address the environmental harms of microplastics and marine plastics: banning the sale and manufacture of microbeads in certain wash-off products (as at 07 June 2018) and banning the sale of single-use plastic shopping bags (as at 01 July 2019).
- Implementing regulated *kaitiakitanga whakanaonga* - product stewardship.

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*The Resource Management Act (1991) (RMA) is New Zealand’s key environmental legislative document providing the framework for the sustainable management of environmental resources (including development activities) such as disposal facilities, recycling and recovery facilities and cleanfills*

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With regards to product stewardship<sup>10</sup>, the WMA seeks to provide for the following:

*“is to encourage (and, in certain circumstances, require) the people and organisations involved in the life of a product to share responsibility for:*

- *Ensuring there is effective reduction, reuse, recycling, or recovery of the product; and*
- *Managing any environmental harm arising from the product when it becomes waste.”*

### Local Government Act 2002

The Local Government Act (2002) provides the legislative framework for democratically elected local authorities to promote the social, economic, environmental and cultural well-being of communities in the present and for the future. This includes taking “appropriate account of the principles of the Treaty of Waitangi” and facilitating “participation by Māori in local authority decision making processes” (Section 4). The Act also gives effect to any schemes (including *kaitiakitanga whakanaonga* - product stewardship schemes) accredited through the WMA, including any bylaws defined within the Local Government Act 2002.

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*The Local Government Act (2002) provides the legislative framework for democratically elected local authorities to promote the social, economic, environmental and cultural well-being of communities in the present and for the future and also has effect to any schemes (including product stewardship schemes) accredited through the WMA*

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### Resource Management Act 1991 (RMA)

The Resource Management Act (1991) (RMA) is Aotearoa New Zealand’s key environmental legislative document providing the framework for the sustainable management of environmental resources (including development activities). The RMA also manages and controls the environmental impacts of waste facilities such as disposal facilities, recycling and recovery facilities and cleanfills.

Section 31 of the RMA sets out the functions of territorial authorities to give effect to the RMA, including to control the actual or potential effects of land-use activities on the *taiao* - environment within the district. All exercising functions under the RMA need to take into account the principles of Te

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<sup>19</sup> Ministry for the Environment (2019). Proposed priority products and priority product stewardship scheme guidelines: Consultation document. Wellington: Ministry for the Environment.

Tiriti o Waitangi - the Treaty of Waitangi and recognize and provide for matters of national significance, including Māori and their cultural relationship to their taonga (including land, water, sacred sites and so forth). Facilities involved in a NZ CRS such as container return facilities (see Section 4 for further discussion) and scheme Material Consolidation Facilities (see Section 7 for further discussion) may fall within controls arising from the functions set out in this section.

### Other Legislation

In addition to the Waste Minimisation Act 2008, Local Government Act 2002 and Resource Management Act 1991, several other national legislative documents are relevant to the establishment of a NZ CRS design. These are discussed briefly in Table 1 below.

**Table 1: National legislative documents relevant to the establishment of the New Zealand Container Return Scheme design**

Legislation	Description
Litter Act 1979	<p>The Litter Act 1979 was established to facilitate abatement and control of litter with Keep New Zealand Beautiful Incorporated appointed as the body primarily responsible for the promotion of litter control in Aotearoa New Zealand.</p> <p>The Act enables local authorities to enforce the provisions of the Act through measures such as litter control officers with powers to issue infringement fines to <i>“any individual or body corporate who deposits any litter or, having deposited any litter, leaves it:</i></p> <p>a) <i>In or on a public place; or</i>  b) <i>In or on private land without the consent of its occupier.”</i></p> <p>Litter as defined by the Act includes <i>“any refuse, rubbish, animal remains, glass, metal, garbage, debris, dirt, filth, rubble, ballast, stones, earth, or waste matter, or any other thing of a like nature.”</i></p>
Climate Change Response Act 2002	<p>The Climate Change Response Act 2002 was established to provide a legal framework to allow Aotearoa New Zealand to ratify the Kyoto Protocol and to meet its obligations under the United Nations Framework Convention on Climate Change.</p> <p>The Act also enables the Emissions Trading Scheme (NZ ETS) where operators of disposal facilities have specific obligations under the NZ ETS.</p>
Health and Safety at Work Act (HSWA) 2015	<p>The Health and Safety at Work Act 2015 (HSWA) is Aotearoa New Zealand’s key work health and safety legislation including regulations under the Act. The aim of the HSWA is to provide a framework to protect the safety of all workers and workplaces together with regulations under the HSWA.</p> <p>The HSWA includes mechanisms to protect workers and other persons from harm, provide for resolution of workplace health and safety issues, and promote health and safety education.</p> <p>The HSWA includes provisions for a range of roles, including the Person Conducting a Business or Undertaking (PCBU) that may have a primary duty of care, including, for example, workers and contractors operating in the waste sector and associated businesses.</p>

Legislation	Description
Ozone Layer Protection Act 1996	<p>The Ozone Layer Protection Act 1996 was established to fulfil Aotearoa New Zealand’s commitments under the Montreal Protocol on substances that deplete the ozone layer.</p> <p>The Act relates to the waste management sector by setting the broad controls and requirements for any ozone depleting substances.</p>

Other policy documents that may have relevance on the design of a NZ CRS include:

- Te Tiriti o Waitangi – The Treaty of Waitangi
- Biosecurity Act 1993;
- Trans-Tasman Mutual Recognition Act 1997;
- Imports and Exports (Restrictions) Act 1988;
- Customs and Excise Act 2018;
- Commerce Act 1986;
- Commerce Amendment Act 2018;
- Food Act 2014;
- Hazardous Substances and New Organisms (HSNO) Act 1996;
- Australia New Zealand Food Standards Code;
- Climate Change Response (Zero Carbon) Amendment Act 2019; and
- New Zealand Packaging Declaration

This section does not preclude the addition of other and/or update of existing legislation and regulations that may influence the design of the NZ CRS.

### 2.1.2.2 International Agreements

There are several international agreements, including Free Trade Agreements that Aotearoa New Zealand is party to that may affect the import and export of waste including recyclable materials. These international agreements are broadly discussed in Table 2 below.

**Table 2: International agreements relevant to the establishment of the New Zealand Container Return Scheme design**

Agreement	Description
Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol)	<p>The Montreal Protocol is an international agreement made in 1987 which has received international approval.</p> <p>The agreement was established with the aim to stop the production and import of ozone depleting substances and reduce their concentration in the atmosphere to help protect the earth’s ozone layer.</p> <p>The agreement affects the waste management industry by recognising that emissions of certain substances used in the manufacture and recycling of certain substances can significantly deplete and/or modify the ozone layer in a manner that may result in adverse effects on human health and the taiao - environment.</p>
Basel Convention on the Control of Transboundary Movements of Hazardous	The 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal is an international treaty designed to reduce the movements of hazardous waste between countries and to protect

Agreement	Description
Wastes and their Disposal	<p>human health and the taiao - environment against the adverse effects of hazardous wastes. The Treaty also regulates the movement of hazardous wastes to developing countries.</p> <p>The Treaty sets the provisions by which signatories must abide by regarding the movement of waste material (including recyclables).</p> <p>In May 2019, Aotearoa New Zealand and approximately 186 other countries agreed via consensus to amend the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their disposal to better regulate global trade in plastic waste to prevent environmental harm.</p> <p>The amendment means exporters of contaminated or hard to recycle plastic waste will require consent from the governments of receiving countries before shipping:</p> <p><i>“The amendment will not prevent the trade of plastic waste but will incentivise trade in high-quality, sorted, clean plastic waste and help ensure that the materials are being shipped for purposes of recycling.”<sup>20</sup></i></p>
The Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region (Waigani Convention)	<p>The Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region (Waigani Convention) came into effect in 2001 and constitutes the regional implementation of the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.</p> <p>The aim of the Waigani Convention is to minimise the production of hazardous and toxic wastes in the Pacific region, an additional component to reduce and eliminate transboundary movements of hazardous and radioactive waste.</p>
Organisation for Economic Co-ordination and Development Decision C(2001)107/FINAL (OECD Hazardous Waste Decision)	<p>The Organisation for Economic Co-ordination and Development Decision C (2001)107/FINAL (OECD Hazardous Waste Decision) was established to facilitate trade of recyclables in an environmentally sound and economically efficient manner by regulating the movement of hazardous waste between OECD countries.</p>
Stockholm Convention on Persistent Organic Pollutants	<p>The Stockholm Convention on Persistent Organic Pollutants is a multilateral environmental agreement to protect human health and the taiao - environment from chemicals that remain intact in the taiao - environment for long periods of time, become widely distributed and accumulate in the tissues of wildlife and humans.</p>
New Plastics Economy Global Commitment	<p>The New Plastics Economy Global Commitment is aimed at bringing together businesses, governments and other organisations to address plastic waste and pollution at its source.</p> <p>The commitment sets clear objectives for signatories to abide by with clear targets set for 2025. All signatories report on an annual basis to ensure transparency and help drive momentum with targets reviewed</p>

<sup>20</sup> <https://www.lawsociety.org.nz/news-and-communications/latest-news/news/nz-agrees-to-basel-convention-plastic-waste-amendment>

Agreement	Description
	every 18 months.
The Convention for the Protection of Natural Resources and Environment of the South Pacific Region (1986) - also known as the SPREP Convention or Noumea Convention	The Convention is a comprehensive umbrella agreement for the protection, management and development of the marine and coastal environment of the South Pacific Region, and represents the legal framework of the Action Plan for managing the Natural Resources and Environment of the South Pacific adopted in 1982 on behalf of the South Pacific Conference on Human Environment.

## 2.2 Existing New Zealand Collection Services

### 2.2.1 Kerbside Collections

Across Aotearoa New Zealand’s 67 territorial authorities a range of household kerbside recycling (dry recyclables) collection services exist with limited consistency between regions with many local authorities having bespoke collection arrangements. However, it is acknowledged that some local authorities employ similar kerbside collection services to neighbouring local jurisdictions to provide a degree of synergy.

The main recyclable material kerbside collections services offered in Aotearoa New Zealand include the following:

- Fully commingled wheelie bin (including glass, paper, cardboard, tins and cans and plastics of various grades);
- Commingled wheelie bin but excluding glass usually collected in crates;
- Two (2) recyclable material streams commingled wheelie bin, with glass removed for separate collection in a crate (e.g., fibre and aluminium commingled);
- Kerbside sorted recyclable materials in crates (including glass, paper, cardboard, tins and cans and plastics of various grades); and
- Kerbside sorted recyclable materials in crates (including paper, cardboard, tins and cans and plastics of various grades) with glass removed.

*The New Zealand Government is supporting a move towards regulated product stewardship to help design waste out of our economy and transition to a circular economy*

Of the local councils offering a kerbside collection service, a two-recyclable material (excluding glass) service is the predominant method of collection with 36% of all local councils offering this to 26% of all households. This is followed by kerbside sorting of recyclables in crates at 31% of all councils and 18% of all households, followed by 19% of councils offering a comingled service in wheelie bins to 49% of all households<sup>21</sup>.

Of the recyclable materials collected from council kerbside collections, Table 3 presents an assessment of the proportion of household collected recyclables and the potential available recyclable content likely to be available through the NZ CRS (i.e., glass, aluminium cans and plastics)

<sup>21</sup> <https://www.mfe.govt.nz/publications/waste/national-resource-recovery-project-situational-analysis-report>

**Table 3: The proportion of household collected recyclables<sup>22</sup>**

Material	Kerbside volume by weight (tonnes)
Plastic	21,740
Liquid paperboard	1,322
Metal	3,045
Glass	129,582

Along with an inconsistent national kerbside collection service, consideration should also be given to the quantity of recycled material that is not currently collected via kerbside recycling collection and/or via commercial/industrial recycling and instead is either disposed to ruapara - landfill or via the litter stream.

In addition, there are also inconsistencies in the type of recyclable material accepted (e.g., Tāmaki Makaurau - Auckland acceptance of plastic grades 1-7 [NOTE: lids retained on all bottles and containers except on Aotea - Great Barrier Island where lids are removed and placed in the general rubbish]), Waikato District Council plastic grades 1, 2 and 5 only (NOTE: lids to be removed), Selwyn District Council plastic grades 1-7 (NOTE: lids to be removed and placed in the general rubbish).

Consequently, the type of collection and the accepted materials have a significant impact on the quality and quantity of product collected (e.g., commingled paper/cardboard with glass). With the current international commodity market impacted by the China National Sword policy (e.g., 2.8million Mt of recovered fibre approved for import to China for 2020 down from 5million Mt in 2019<sup>23</sup>) and similar moves from other countries such as Indonesia and India, Aotearoa New Zealand is facing a significant opportunity to fast-track the transition to ōhanga āmiomio - circular economy. As detailed in the New Zealand Government's circular economy work programme<sup>24</sup>, transition initiatives include:

- Improve kerbside and commercial recycling, reduce contamination of recyclables so more materials can be recovered, and increase onshore processing of plastics and other materials;
- Implementing kaitiakitanga whakanaonga - product stewardship schemes for problematic waste streams;
- Analysing where investment in innovation and resource recovery infrastructure is most needed to support Aotearoa New Zealand's transition to ōhanga āmiomio - circular economy approach; and
- Developing a national circular economy strategy, starting with priority sectors where the greatest benefits can be gained from transitioning to ōhanga āmiomio - circular economy approach.

*Across New Zealand's 67 territorial authorities a range of household kerbside collection services exist with limited consistency between regions with many local authorities having bespoke collection arrangements. Some local authorities employ similar kerbside collection services to neighbouring local jurisdictions to provide a degree of synergy*

*The government acknowledges the need for product stewardship schemes to be co-designed as well as ensuing robust assessments are carried out on onshore recycling infrastructure to ensure Aotearoa New Zealand has the infrastructure needed to support regulated kaitiakitanga whakanaonga - product stewardship, including the collection and reporting of improved waste data.*

<sup>22</sup> NZ CRS Project Territorial Local Authority Survey of New Zealand Kerbside collections March 2020

<sup>23</sup> <https://resource-recycling.com/recycling/2020/01/07/china-continues-to-decrease-permits-for-imported-paper/>

<sup>24</sup> <https://www.mfe.govt.nz/waste/waste-and-government>



A key matter for consideration in Aotearoa New Zealand’s production of recyclable materials is the requirement to meet a contamination level of no more than 0.5% on most inbound loads of recyclables entering the China market, an increase in product quality from 1.5% percent contamination. This stringent requirement has an immediate effect on the current quantity, quality and financial value of recyclables brokered on the international commodity market (e.g., sorted, baled steel cans – 2018 approximately US\$190/tonne; 2019 approximately US\$90/tonne<sup>25</sup>). Therefore, for Aotearoa New Zealand to sustain current export markets for kerbside collected recyclables, focus is now required on method of collection to maximise product value and the implementation of appropriate kaitiakitanga whakanaonga - product stewardship schemes.

## 2.2.2 Kaitiakitanga Whakanaonga - Product Stewardship under the Waste Minimisation Act 2008

To ensure the economy moved towards a more efficient economy, the New Zealand Government is supporting a move towards regulated kaitiakitanga whakanaonga - product stewardship to help design waste out of our economy and transition to *ōhanga āmiomio* - circular economy. Kaitiakitanga Whakanaonga - Product stewardship is *“when people and businesses take responsibility for the life-cycle impacts of their products, either voluntarily or in response to regulatory tools”*.<sup>26</sup>

To help achieve this, the government acknowledges the need for kaitiakitanga whakanaonga - product stewardship schemes to be co-designed as well as ensuing robust assessments are carried out on onshore recycling infrastructure to ensure Aotearoa New Zealand has the infrastructure needed to support regulated kaitiakitanga whakanaonga - product stewardship, including the collection and reporting of improved waste data.

Voluntary and regulated kaitiakitanga whakanaonga - product stewardship schemes are discussed in the following sections.

### 2.2.2.1 Voluntary Kaitiakitanga Whakanaonga - Product Stewardship

The WMA enables producers to apply for accreditation by the Manatū Mō Te Taiao - Minister for the Environment for a kaitiakitanga whakanaonga - product stewardship scheme if it meets the requirements of the Act. There are currently 15 voluntary kaitiakitanga whakanaonga - product stewardship schemes accredited under the WMA.

To date, more than 350 Aotearoa New Zealand organisations have participated in one or more accredited voluntary schemes resulting in more than 1.3 million tonnes of waste diverted from ruapara - landfill. The following table provides examples<sup>27</sup> of government accredited voluntary schemes that organisations have implemented to take greater responsibility of their products Table 4.

**Table 4: Examples of Aotearoa New Zealand accredited voluntary schemes**

Scheme	Details
Agrecovery rural recycling programme	Agrecovery provides Aotearoa New Zealand farmers and growers with programmes for container recycling, drum recovery and the collection of unwanted or expired chemicals.

<sup>25</sup> <https://resource-recycling.com/recycling/2019/12/10/mrfs-enjoy-higher-prices-for-key-recovered-plastics/>

<sup>26</sup> Ministry for the Environment (2019). Proposed priority products and priority product stewardship scheme guidelines: Consultation document. Wellington: Ministry for the Environment.

<sup>27</sup> <https://www.mfe.govt.nz/node/23986/>

Scheme	Details
Fonterra Milk for Schools Recycling Programme	<p>Milk cartons (including the straw and straw wrapper) are collected from schools participating in the Fonterra Milk for Schools Programme. They are broken down into components (paper, aluminium foil and plastic) and recycled into roof tiles, books and paper.</p> <p>Since the scheme began, more than 600 tonnes of waste materials have been recycled into new schoolbooks for children.</p>
New Zealand Glass Packaging Forum	<p>The forum connects businesses that sell glass-packaged consumer goods with those that collect and recycle glass. This helps to improve the quality and quantity of glass that is recycled. The aim is zero container glass to landfill.</p> <p>Recycling glass also reduces the production of CO<sub>2</sub> and the use of virgin materials in glass manufacture. Where recycling is not possible, the forum helps to find alternative uses.</p>
Plasback	<p>Plasback collects and recycles agricultural plastics such as bale and silage wrap, and crop bags from around 25% of Aotearoa New Zealand farms.</p> <p>Since the scheme started a reported 10,000 tonnes of waste plastic have been collected. The silage plastic is recycled in Tāmaki Makaurau - Auckland into Tuffboard, a plywood replacement sheet that has many uses on farms.</p>
Public Place Recycling Scheme	<p>The scheme aims to install 3,400 recycling bins in public places by 2020. This aims to reduce litter and increase recycling to around 140 million cartons, cans, glass and plastic bottles each year.</p> <p>The scheme is funded by brand owners and packaging manufacturers who work with event organisers, councils and other organisations.</p>
Re:Mobile	<p>The programme offers e-waste recycling for mobile phones and accessories. Unwanted mobile phones that are still working are sold for refurbishment and resale overseas while others are recycled.</p> <p>Proceeds from the scheme are donated to Sustainable Coastlines, an organisation which plants trees along awa - waterways to restore habitats for native animals, reduce sediment and improve water quality.</p>
Soft Plastic Recycling Scheme	<p>Soft plastic packaging is collected from participating stores and delivered to two Aotearoa New Zealand processors; Future Post in Waiuku and Second Life Plastics in Levin. The soft plastics are then turned into new products, such as plastic fence posts, cable covers and garden edging.</p> <p>The scheme is funded by the food and grocery product brand owners that are members of the scheme. These brand owners represent around 70 percent of the food and grocery products packaged in the soft plastics that can be processed via the scheme.</p> <p>The brand owners pay a levy which funds the collection of the soft plastics from participating stores, quality checks, baling, transport and processing.</p>
Sharp Comprehensive Recycling and Waste Reduction Scheme	<p>Sharp New Zealand aims to reuse and recycle 100 per cent of its packaging materials, electronic products, equipment, and obsolete and used parts.</p> <p>In 2016, the Sharp scheme recycled 1,006 m<sup>3</sup> of e-waste, 18,782 toner cartridges and 1,249m<sup>3</sup> of packaging waste. Sharp's waste to landfill decreased 29% between 2015 and 2016.</p>

Scheme	Details
Paintwise	Resene accepts unwanted Resene paint containers and paint to recycle or dispose of them responsibly which is funded through a levy paid for by the consumer at the point of sale. A small charge applies to non-Resene branded products to help offset the costs of the PaintWise Programme.

### 2.2.2.2 Regulated Kaitiakitanga Whakanaonga - Product Stewardship – Priority Products

Regulated kaitiakitanga whakanaonga - product stewardship differs from voluntary schemes by making producers responsible for specified products at the end of their life and that the cost of this process is paid by consumers and producers<sup>28</sup>.

At present there are no regulated kaitiakitanga whakanaonga - product stewardship schemes in Aotearoa New Zealand, however there are many global examples for products such as packaging, e-waste, paint and batteries. While each scheme is unique, they operate in much the same way and typically require product fees on entry to the market with reallocation of fees to ensure products are recycled or managed appropriately.

In 2020, the New Zealand Government declared the General Guidelines for Product Stewardship Schemes for Priority Products Gazette Notice for the implementation of regulated kaitiakitanga whakanaonga - product stewardship for six (6) priority products. The aim of this process is to 'have a more productive, sustainable, inclusive and low-emissions economy for a 'more prosperous and fairer society, and economic growth within environmental limits'.

The Government has confirmed the following six (6) priority products will be included:

- Packaging
- Farm plastics
- Tyres
- Electrical and electronic products
- Refrigerants and other synthetic greenhouse gases
- Agrichemicals and their containers

The following schematic (Figure 6) details the proposed two-stage co-design consultation process to be carried out by the government under the WMA (2008)<sup>29</sup> to establish regulated kaitiakitanga whakanaonga - product stewardship for the priority products.

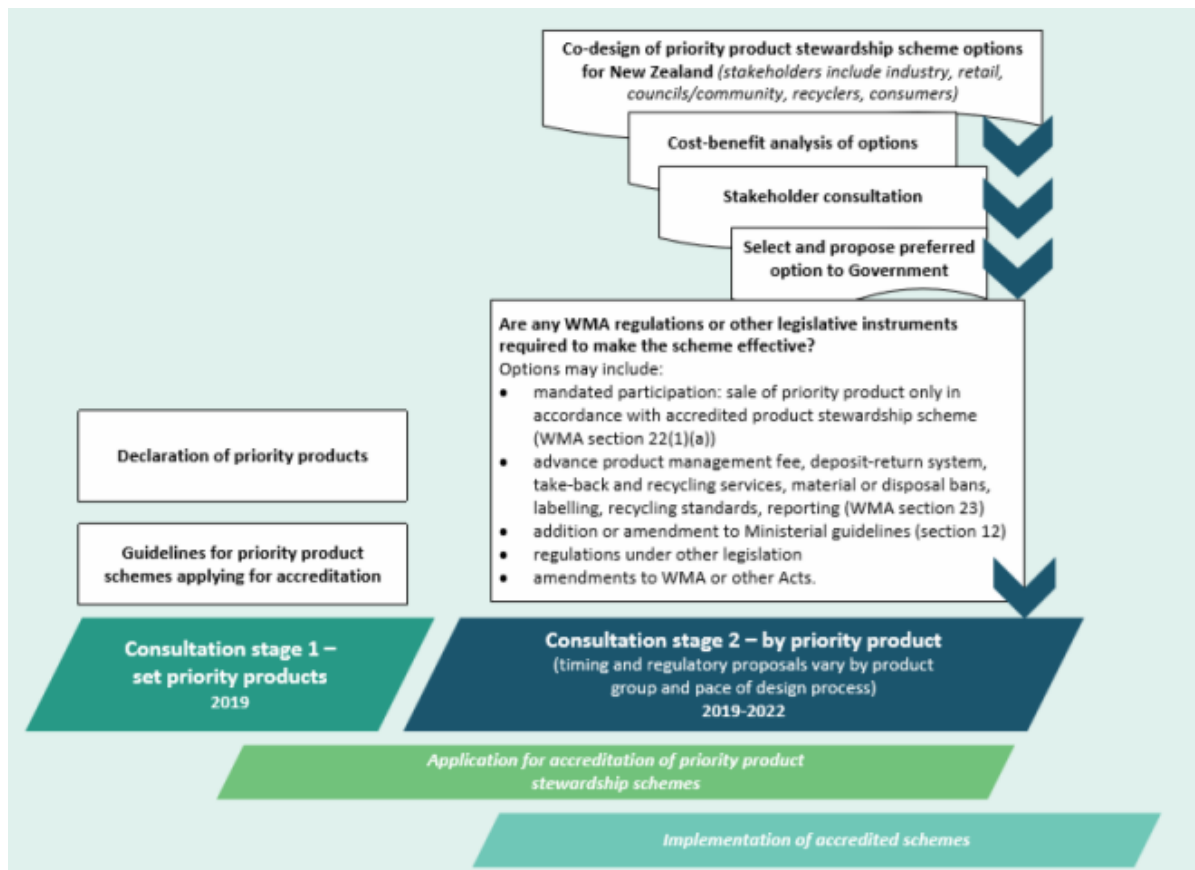
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*As declared in 2019, the New Zealand Government is proposing the implementation of regulated product stewardship for six (6) priority products. The aim of this process is to 'have a more productive, sustainable, inclusive and low-emissions economy' for a 'more prosperous and fairer society, and economic growth within environmental limits'*

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<sup>28</sup> <https://www.mfe.govt.nz/sites/default/files/media/Waste/proposed-priority-products-and-priority-product-stewardship-scheme-guidelines.pdf>

<sup>29</sup> <https://www.mfe.govt.nz/sites/default/files/media/Waste/proposed-priority-products-and-priority-product-stewardship-scheme-guidelines.pdf>



**Figure 6: Proposed priority product two-stage co-design consultation process**

The development of a NZ CRS is one step in the government’s plan to make a step change to the Aotearoa New Zealand recycling system by putting a value on containers. In turn, the establishment of a CRS will help New Zealanders reduce their waste, practice manaakitanga and move towards adoption of ōhanga āmiomio - circular economy approach.

The investigation and design of the NZ CRS while a separate process, will run concurrently and in parallel with the establishment of the priority products and priority kaitiakitanga whakanaonga - product stewardship guidelines ensuring awareness and recognition of the work programmes.

## 2.2.3 Quality of Material, Infrastructure and End-Markets

With the growing international impacts on recycling markets (e.g., China National Sword), greater focus is needed to ensure Aotearoa New Zealand’s production of recyclable materials meets the strict quality standards imposed by overseas markets.

### 2.2.3.1 Management of Material Quality

Aotearoa New Zealand local councils currently offer households a range of inconsistent recyclable material collections, from fully commingled to separation of material types using crates. This inconsistent approach can lead to variability in the quality of material received and able to be processed (e.g., Material Recovery Facility (MRF)) and therefore has a resultant effect on the value of the product(s).

To assist in minimising contamination of recyclable materials, local councils often set specific contamination levels as part of their procurement processes and contracts that collection contractors must meet. However, the ongoing modifications to the quality standards required of inbound recyclable loads indicates a resultant impact on the volume of recyclable products exported from Aotearoa New Zealand (refer Section 2.4). This will mean greater focus is needed at a national level to ensure Aotearoa

New Zealand collects and processes materials to ensure maximum product quality and subsequent commodity value.

At a local council<sup>30</sup> level, there are several ways contamination can be managed however, the effectiveness of these may be dependent on factors including resourcing and the type of collection service offered:

- Communication with residents regarding rejected material;
- Targeted and broad community engagement and education;
- Enforcement of penalties where rejected material is consistently placed in recycling bins; and
- Bin audits.

The relationship between collection methodology and the ability to process the recycled material must also be considered to ensure the appropriate infrastructure is in place to ensure maximum product capture, quality and commodity price. This will be discussed further in the next section.

### 2.2.3.2 National Waste Management Infrastructure

Acknowledging that current collection methods and recycling rates are inconsistent across Aotearoa New Zealand and the ongoing global developments in increasing the quality of imported recyclable materials, there is now a need for Aotearoa New Zealand to critically assess current waste infrastructure to establish investment requirements to support onshore processing as well as supporting the implementation of NZ CRS, including:

- Improved sorting of collected commodity products;
- Minimise contamination;
- Maximise the quality of commodity products;
- Response to increased recycling recovery; and
- Increased volume of recovery via a NZ CRS.

Within Aotearoa New Zealand, the majority of key waste infrastructure (e.g., MRFs) are owned by the private sector with contracts in place with a range of councils and commercial organisations to manage recyclable waste (e.g., paper and cardboard, plastics, ferrous and non-ferrous metals and glass). Of the available data, the total annual tonnage of recycled commodities is approximately 1.3M tonnes, of which approximately 340,000 tonnes are derived from Aotearoa New Zealand households (Section 2.2.1).

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*There is now a need for Aotearoa New Zealand to critically assess current waste infrastructure to establish investment requirements to support onshore processing as well as supporting the implementation of NZ CRS*

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### 2.2.3.3 End-Markets for Recyclables

The quality of a material commodity is a significant consideration when determining the value of a product and hence any final end-market. Acknowledging the inconsistent kerbside collection methodologies and the potential for contamination from comingled services, the processing (e.g., cleaning and preparation) of materials is critical to ensure materials receive the best price when traded on the international commodity markets. Processing is dependent on the type of material, with, for example, plastics requiring separation into material type to ensure a clean uncontaminated product depending on the offshore end-market to be sold into. Of the plastics recycled in Aotearoa New Zealand (approximately 45,000tonnes/annum), approximately 90% of the volume is exported<sup>22</sup>. Glass processing requires colour separation including a beneficiation process to remove contaminants (e.g., bottle top, labels) before the recycled glass is moved through to the furnaces for re-processing. The available information notes all glass collected via kerbside collections (approximately 148,348tonnes/annum<sup>31</sup>) is recycled onshore (e.g., beneficial use including remanufacturing into glass bottles and roading base)

<sup>30</sup> <https://www.mfe.govt.nz/publications/waste/national-resource-recovery-project-situational-analysis-report>

<sup>31</sup> NZ CRS Project Territorial Local Authority Survey of New Zealand Kerbside collections March 2020

with no proportion of this collected volume processed and exported<sup>22</sup>. In comparison, of the non-ferrous metals (e.g., aluminium and tin) quantities collected from kerbside (approximately 15,000tonnes/annum<sup>32</sup>), greater than 95% is processed and exported to offshore markets<sup>22</sup>.

International reports are suggesting that worldwide recycling markets<sup>33</sup> will grow by 2024 and in terms of plastic, may focus on grades such as PET<sup>34</sup>, HDPE<sup>35</sup>, PP<sup>36</sup> and LDPE<sup>37</sup>, with the forecasted international recycled market potentially reaching US\$50.5 billion (2018 international recycled market was valued at US\$35.4 billion).

With the current international trends for a reduction in waste production and an increase in onshore recycling stimulated by factors including China National Sword and the recent COVID-19 global health pandemic, many recycling operators in Aotearoa New Zealand may move towards focussing on targeting and selling their products to a wider range of international end-markets, including, for example, Australia and Asia (China, Indonesia, India, Thailand, Malaysia and Vietnam) coupled with supporting current onshore markets.

## 2.3 Material Flow

The flow of recyclable materials in Aotearoa New Zealand is a key consideration when designing a NZ CRS as a number of national (e.g., recyclable material collection methodologies) and international (e.g., international commodity values) competing factors will influence Aotearoa New Zealand's ability to trade high-quality material in an increasingly competitive international market.

### 2.3.1 Aotearoa New Zealand

The Aotearoa New Zealand commercial and household recycling sector is reported to manage approximately 1.3million tonnes of material (paper and cardboard, non-ferrous and ferrous metals, plastics and glass) per annum.

Within the Aotearoa New Zealand waste and resource management sector, the key components related to the flow of recyclable materials comprises four (4) key elements (Figure 7):

- Collection
  - As discussed in Section 2.2.1, the quality of recyclable material is related to the type of collection methodology (i.e., comingled, source separated) which has resultant influence on product value when brokered on the international commodity market. In comparison, recyclable materials collected from commercial sources is considered of higher quality related to the separation of recyclable materials at source. The inconsistency between kerbside and commercial collections influences the overall quality of the combined recyclable product which is directly related to the ability for MRFs to process high-quality clean recyclable products.
- Bulking and Processing
  - Recyclable materials collected from kerbside and/or commercial sources is typically bulked before transportation to a MRF where processing of materials into product types (e.g., plastic grades, aluminium, colour sorted glass) occurs. In most cases bulking reduces transport costs and has been a key consideration during the design of NZ CRS including the

<sup>32</sup> NZ CRS Project Territorial Local Authority Survey of New Zealand Kerbside collections March 2020

<sup>33</sup> <https://global-recycling.info/archives/3134>

<sup>34</sup> Polyethylene terephthalate

<sup>35</sup> High-density Polyethylene

<sup>36</sup> Polypropylene

<sup>37</sup> Low-density Polyethylene

location and function of collection locations (this will be covered in ,Section 4 – Container Return Facilities’).

- Brokerage and Shipment
  - Aotearoa New Zealand recyclable materials are traded by brokers on the international commodity market with other materials and products directly competing with products from other countries including virgin materials. Therefore, the value of a recyclable product is directly related to the quality of the material which is significantly influenced by collection methodology (e.g., commingled versus source separated). Additionally, some larger waste operators trade recyclable commodities directly with a number of end-markets and/or have existing arrangements in place with importers. However, the change in international commodity markets is now placing pressure on brokers and existing export arrangements to locate alternative destinations willing to purchase Aotearoa New Zealand’s recyclable commodities.
- Processing and Manufacture
  - As discussed in Section 2.2.3, recyclable material requires processing (dependent on product type – e.g., glass, plastic) before it can be reused in manufacturing processes and the production of new products. For example, plastics may be flaked or made into pellets with glass requiring a beneficiation process to remove contaminants prior to furnacing (refer Section 2.2.3 – ‘Quality of Material, End-Markets and Infrastructure’).

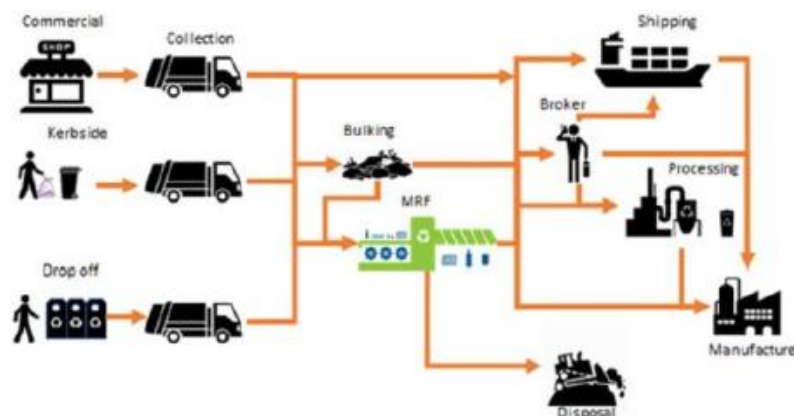


Figure 7: Schematic of Aotearoa New Zealand’s material flow<sup>38</sup>

### 2.3.2 International

As discussed in the preceding sections, China’s restriction on the importation of recyclable materials in early 2018 has resulted in a significant reduction in export markets and a fall in the price paid for recovered materials. With China’s restrictions via the implementation of its ‘National Sword’ policy, exportation of recyclable material into China, including from Aotearoa New Zealand, must now meet a quality criterion of 99% to 99.5% uncontaminated material from 90-95% previously required. This increase in material purity is having an impact on global recycling markets and is placing pressure on existing Aotearoa New Zealand infrastructure to optimise sorting processes to meet requirements for higher quality materials.

In addition to the changing international commodity markets, the trade of Aotearoa New Zealand recyclable materials is also impacted by factors such as costs of transportation (e.g., port costs, compliance costs) to export destinations (e.g., China, Southeast Asia, Australia, etc); costs which must be accounted for in organisational profitability.

<sup>38</sup> <https://www.mfe.govt.nz/publications/waste/national-resource-recovery-project-situational-analysis-report>

## 2.4 Imports and Exports

The international flow of recycled materials is deeply embedded in the international waste commodity trade market. This section considers the international trade in recyclable commodities only with the import of containers into Aotearoa New Zealand to be covered in Section 4.

For the purpose of the NZ CRS, the types of recyclable commodities that are relevant are plastic, non-ferrous metals, and glass with a brief description of these materials provided in Table 5 below. While it is acknowledged that there may be ferrous based (e.g., steel) beverage containers, no such containers have been identified in Aotearoa New Zealand, and have at this stage, been excluded from the following discussion.

**Table 5: Definition of recycling commodities**

Material	Definition
Plastic <sup>39</sup>	This contains waste, parings, and scrap of plastics. It is also called scrap plastic. Scrap plastic can contain plastic bags, food containers, packaging, pellets, monofil, tubes, rods, plates, sheets, resin.
Non-ferrous metals <sup>40</sup>	Non-ferrous metals do not have iron content and include aluminium, steel, zinc, copper, and lead. For the purpose of this report, only aluminium and steel have been included in the calculations as other non-ferrous metals are unsuitable for use with beverages. As with the other materials both aluminium and steel are in the form of scrap.
Glass <sup>41</sup>	The glass considered here are scraps also known as cullet and waste glass.

These materials have a wide range of tradability and total value in the global market. Non-ferrous metals have the highest import/export value of the materials, followed by tin, plastic and glass (based on 2017 data predating the impact of China's National Sword) (Table 6):

- Aluminium (non-ferrous) the 237<sup>th</sup> most traded product with a total import/export value of NZD\$19.0 billion;
- Plastic the 445<sup>th</sup> most traded product with a total import/export value of NZD\$7.7 billion;
- Glass the 1068<sup>th</sup> most traded product with a significantly lower total import/export value of NZD\$487.0 million; and
- Tin (non-ferrous) the 1158<sup>th</sup> most traded product with a total import/export value of NZD\$174.5 million.

Since the implementation of the China National Sword, export volumes and the associated global market value for recyclable commodities, particularly plastics and paper, has seen a significant decrease<sup>42</sup>.

<sup>39</sup> HS 3915. Foreign Trade Online Harmonised System Definition.

<sup>40</sup> Alu HS 7602, Tin HS 8002. Foreign Trade Online Harmonised System Definition.

<sup>41</sup> HS 7001. Foreign Trade Online Harmonised System Definition.

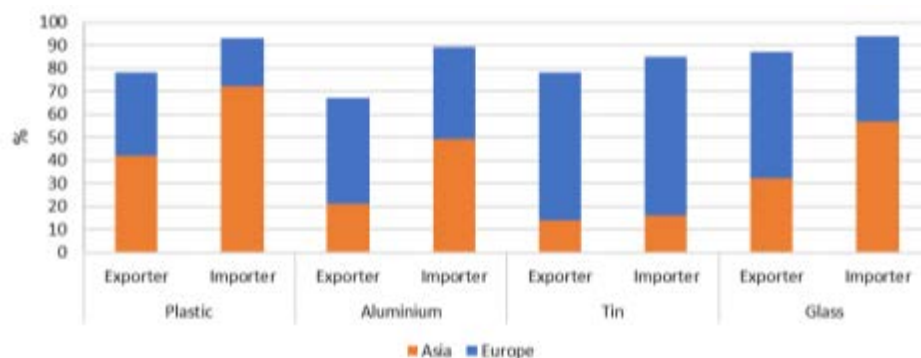
<sup>42</sup> <https://www.wastemanagement.co.nz/getmedia/b697192f-d8e7-4b97-b23f-d189f5bf2a8f/220-Global-Recycling-Flyer-v5.pdf/>



**Table 6: Total global import/export value of recyclable commodities including the Aotearoa New Zealand proportion of import/exports, 2017<sup>43</sup>**

Material	Global		Aotearoa New Zealand			
	most traded product	Value	Export		Import	
			Value	% of global market	Value	% of global market
Aluminium	237	19\$B	77.5\$M	0.41%	5.30\$M	0.03%
Plastic	445	7.7\$B	14.8\$M	0.19%	5.31\$M	0.07%
Glass	1068	487\$M	0.7\$M	0.14%	-	-
Tin	1158	174.5\$M	0.3\$M	0.17%	0.23\$M	0.13%

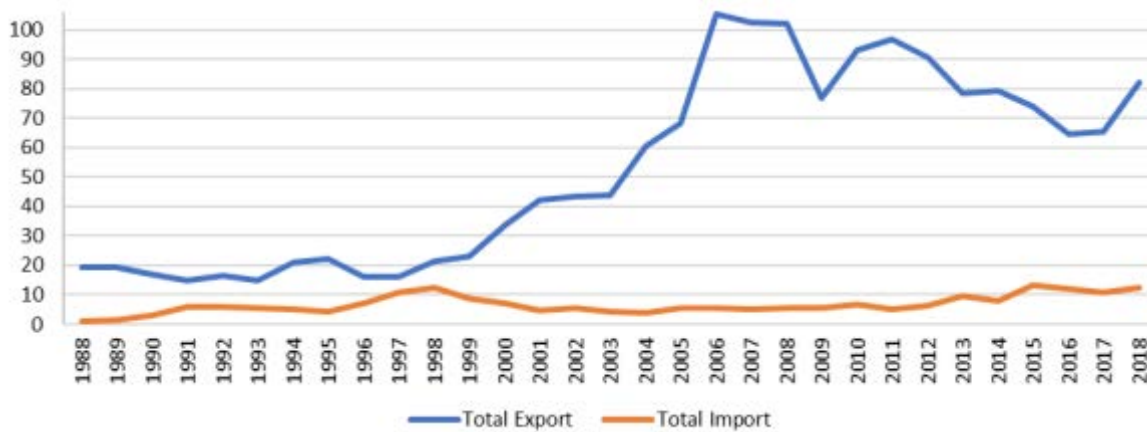
Internationally, the majority of recyclable commodities tend to flow from European countries to Asian countries as shown in Figure 8 with Asia importing approximately 70% of the combined plastic volume (Figure 8). Within Asia, the largest importers are China (47%), Hong Kong (11%), Vietnam (3.4%) and Malaysia (2.3%), with Hong Kong also a large exporter of plastic (exporting approximately 8% plastic). Since the implementation of China's National Sword, proportionally more plastic has been imported into Southeast Asian countries, such as Vietnam, Indonesia, Thailand, and Malaysia. Aluminium and glass product also flow from Europe to Asia with tin the only exception for which both export and import are dominated by European countries.

**Figure 8: Geographical location of exporter and importer of waste commodities (%), whereby the exporter is the party selling the material and the importer the party buying it<sup>44</sup>**

Like European countries, Aotearoa New Zealand is an exporter of recycling commodities, as shown in Figure 9. In 2018, Aotearoa New Zealand exported recycling commodities (aluminium, tin, plastic, glass) equivalent to the value of approximately NZD\$80 million, almost seven times as much as the imported recyclable commodities (aluminium, tin, plastic, glass) (approximately NZD\$12 million).

<sup>43</sup> <https://oec.world/en/> US\$ value was converted into NZ\$ value using the exchange rate for 2017 provided by <https://data.worldbank.org/indicator/PA.NUS.FCRF>

<sup>44</sup> <https://oec.world/en/> US\$ value was converted into NZ\$ value using the exchange rate for 2017 provided by <https://data.worldbank.org/indicator/PA.NUS.FCRF>



**Figure 9: Aotearoa New Zealand import and export of waste commodities in \$M<sup>45</sup>**

As discussed in Section 2.2.3, of the main commodity types collected within Aotearoa New Zealand (i.e., paper and cardboard, plastics, ferrous metals, non-ferrous metals and glass), main exported commodities are

non-ferrous and ferrous metals (>95% exported respectively), plastics (approximately 90% exported) and paper and cardboard (>60% exported). At the time of writing, no known volumes of glass are exported from Aotearoa New Zealand.

In addition to the change in volumes of exported commodities, Aotearoa New Zealand has also seen a shift in international commodity trading partners from China representing the main importer of recoverable commodities to Southeast Asian countries (e.g., Vietnam, Thailand) now representing the main export destinations<sup>46</sup>.

This is particularly relevant considering Aotearoa New Zealand's commitment to better regulate global trade in plastic waste to prevent environmental harm under the Basel Convention. Further, Aotearoa New Zealand is a participant of the New Plastics Economy Global Commitment which aims to address plastic waste and pollution at its source.

The fate and marketability of materials recovered from a Container Return Scheme will need to consider and factor in the significant and dynamic changes that have been occurring globally to ensure a sustainable solution is arrived at, in keeping with the principles of *ōhanga āmiomio* - circular economy.

## 2.5 Summary

The design of Aotearoa New Zealand's Container Return Scheme (NZ CRS) will help to place a value on containers, reduce the volumes of glass and other container litter and increase opportunities for refilling. The implementation of a NZ CRS will also give effect to *ōhanga āmiomio* - circular economy outcomes and any future priority product guidelines.

The following summarises the current knowledge of the international and Aotearoa New Zealand waste and resource management sector based on available data and information. Section 2 – 'Setting the Scene' will be updated as more data become available during the NZ CRS design process. The following list provides a summary of the information presented and available to date:

- The development of a NZ CRS is one step in the Government's plan to make a step change to the Aotearoa New Zealand recycling system by putting a value on containers. In turn, the establishment of a NZ CRS will help New Zealanders reduce their waste and move towards adoption of *ōhanga āmiomio* - circular economy approach.

<sup>45</sup> <http://archive.stats.govt.nz/infoshare/TradeVariables.aspx?DataType=TEX>

<sup>46</sup> <https://www.mfe.govt.nz/publications/waste/national-resource-recovery-project-situational-analysis-report>

- The establishment of global container return schemes has been a key initiative in assisting governments move from a linear economy to ōhanga āmiomio - circular economy.
- Container return schemes already operate throughout the world in countries such as Germany, Lithuania, Australia, Canada and Norway with other countries such as Singapore are now seeing the significant benefits these schemes have for the economy and society.
- Internationally, there are over forty (40) container return schemes with Adelaide, South Australia claiming the longest running scheme at 42-years and reporting an overall return rate of 76.4%.
- 83% of New Zealander's support the establishment of a NZ CRS with 90% of Local Government New Zealand (LGNZ) endorsing a nationally mandated NZ CRS to be in place within a 2-year period.
- The current level of beverage and other container recovery is moderate and of varying quality across Aotearoa New Zealand with recycling rates of all current beverage containers (glass, plastic, cans) between 45-58% resulting in the loss of valuable resources to disposal.
- With the implementation of a NZ CRS the recycling rates are expected to increase from between 45-58% to between 79-82%, have a subsequent reduction in the amount of litter and provide a range of financial benefits (e.g., job creation, industry growth and innovation, improved public awareness and engagement in resource efficiency).
- The global waste market is changing at a rapid pace with plastic waste is becoming a major commodity used in end-of-life products on a global scale. Historic data suggests plastic production has outpaced almost every other manufactured material.
- The Organisation for Economic Co-operation and Development (OECD) notes Aotearoa New Zealand as one of the highest producers of municipal waste in the OECD - the Aotearoa New Zealand kilogram per capita municipal waste was approximately 640kg/capita, with a significant increase in 2017 to approximately 740kg/capita – an increase of approximately 99kg/capita in 3-years.
- A recent litter survey carried out by Keep New Zealand Beautiful reported that of the beverage containers recorded by industry category, alcoholic beverage containers and packaging was the predominant source (49.6%) followed by non-alcoholic beverage containers and packaging (14.3%) and milk beverage containers and packaging (2.1%).
- To help reduce the amount of waste produced, the New Zealand Government is encouraging producers, brand owners, importers, retailers and consumers to take greater responsibility to transition from a linear to ōhanga āmiomio - circular economy. Measures include the identification of six (6) priority products and the establishment of kaitiakitanga whakanaonga - product stewardship schemes.
- Across New Zealand's 67 territorial authorities a range of kerbside collection services exist with limited consistency between regions with many local authorities having bespoke collection arrangements.
- Of the local councils offering a kerbside collection service, a two-recyclable material (excluding glass) service is the predominant method of collection with 36% of all local councils offering this to 26% of all households. This is followed by kerbside sorting of recyclables in crates at 31% of all councils and 18% of all households, followed by 19% of councils offering a comingled service in wheelie bins to 49% of all households.
- The cost of landfill disposal has had an influence on product recovery with disparity amongst the national cost of landfill disposal (i.e., \$200-\$250/tonne to \$50/tonne) resulting in disparate behaviours by the waste industry and different levels of investment throughout the country. With the New Zealand Government proposing an increase in the waste levy, increased investment in alternatives to landfill disposal is anticipated in keeping with the objectives of the Waste Minimisation Act 2008 is expected.

- Recent international market changes including restrictions by China on the importation on waste and recyclables has highlighted the need to take a closer look at the way Aotearoa New Zealand manages its waste, including current onshore processing and recycling. The New Zealand Government has established and enacted several key legislative documents that set the requirements for waste minimisation and management. In addition, the New Zealand Government has ratified several international agreements to manage Aotearoa New Zealand’s impact on the global waste sector.
- Acknowledging that current collection methods and recycling rates are inconsistent across Aotearoa New Zealand and the ongoing global developments in increasing the quality of imported recyclable materials, there is now a need for Aotearoa New Zealand to critically assess current waste infrastructure to establish investment requirements to support onshore processing as well as supporting the implementation of NZ CRS.
- Of the available Aotearoa New Zealand data, the total annual tonnage of recycled commodities is approximately 1.3 million tonnes, of which approximately 340,000tonnes are derived from Aotearoa New Zealand households.
- Of the plastics recycled in Aotearoa New Zealand (approximately 45,000tonnes/annum), approximately 90% of the volume is exported. All glass collected via kerbside collections (approximately 160,000tonnes/annum) is at this stage reported to be recycled onshore (e.g., remanufacturing into glass bottles and roading base) with no proportion of this collected volume exported. Of the non-ferrous metals (e.g., aluminium and tin) quantities collected from kerbside (approximately 50,000tonnes/annum), greater than 95% is processed and exported to offshore markets.
- International reports suggest that worldwide recycling markets will continue to grow to the year 2024 and in terms of plastic, may focus on grades such as Polyethylene terephthalate (PET), High-density polyethylene (HDPE), Polypropylene (PP) and Low-density polyethylene (LDPE). The forecasted global recycled market may potentially reach US\$50.5billion (2018 global recycled market was valued at US\$35.4billion).
- The quality of a material commodity is a significant consideration when determining the value of a product and hence any final end-market. Acknowledging the inconsistent kerbside collection methodologies and the potential for contamination from commingled services, the processing (e.g., cleaning and preparation) of materials is critical to ensure materials receive the best price when traded on the international commodity markets.

## 2.6 Summary of Design Feedback Received

The following table provides a high-level summary of the feedback received from the Scheme Design Working Group (SDWG) members after reviewing the section information. As many suggestions as possible have been incorporated but the NZ CRS Project Team acknowledge that the wide range of views expressed meant not every edit could be accepted. The NZ CRS Project Team is grateful for those who have provided feedback and where possible these have been used to provide further clarity and context throughout this section and to identify areas requiring further assessment during the NZ CRS implementation stage (Section 17).

<b>Setting the Scene Feedback - High-Level Summary</b>	
<b>Areas for further Investigation</b>	
Detailed analysis of relevant Aotearoa New Zealand legislation and/or regulations (see Section 13 and Section 17 for further discussion).	Detailed analysis of international commitments, trade agreements, global policies and treaties (see Section 13 and Section 17 for further discussion).
Information on Aotearoa New Zealand's voluntary schemes (see Section 12 for further discussion).	The relationship between waste, NZ CRS and impacts on the taiao - environment, including climate change, plastic pollution, greenhouse gas emissions and reduced per capita consumption (see Section 17 for further discussion).
How the scheme will protect future generations (see Section 6, Section 13 and Section 17 for further discussion).	More accurate data on litter and financial value of plastic pollution in Aotearoa New Zealand (see Section 17 for further discussion).
Assessment of existing end-markets (see Section 17 for further discussion).	Problems associated with different councils operating multiple different recycling schemes (see Section 17 for further discussion).
Relationship of the Aotearoa New Zealand Container Return Scheme (CRS) to the waste hierarchy including associated employment opportunities (see Section 6, Section 13 and Section 17 for further discussion).	
<b>Do not Support the Following</b>	
The reuse of glass in roading, as this is viewed as downcycling. Glass should rather go into bottle-to-bottle production.	The concept that ōhanga āmiomio - circular economy is possible in Aotearoa New Zealand, without consideration of imports and exports.
<b>Support the Following</b>	
Banning the export of waste. Aotearoa New Zealand should not be exporting waste rather should focus on onshore opportunities.	



# SECTION 3: SCOPE OF CONTAINERS

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## Section 3 Scope of Containers

Across the more than forty (40) global container return schemes, the inclusion of containers in the various schemes differs between continents, countries, states and territories, indicating the uniqueness of each scheme. The common criteria used for the selection of eligible and ineligible containers was whether a container was considered a single-use beverage, many of which end up in the litter stream and ultimately in the taiao - environment.

Typically, schemes include all single-use beverage containers comprising the broad material categories of glass, plastic, metal and liquid paperboard (LPB).

*Typically, schemes include all single-use beverage containers comprising the broad material categories of glass, plastic, metal and liquid paper board.*

Similarly, the size of containers included varied across schemes with many including all single-use beverage containers less than 3L - 4L, or as in Denmark, all containers less than 20L. However, as schemes have matured and enter a review process (e.g., South Australia and Denmark<sup>47</sup>), and as industry and community awareness grows regarding product end-of-life responsibility, an expanded range of containers including kitchen and laundry products, bathroom and garage products are now being considered.

Alongside single-use containers and inclusion in container return schemes, several countries also include refillable containers under either a voluntary or compulsory refillable deposit requirement. While it is not the intent of this report to discuss the current and potential future Aotearoa New Zealand refillable market in detail, Section 3.1.3 discusses refillables at a high-level in the context of a container return scheme and in alignment with the objectives of the NZ CRS design.

*Alongside single-use containers and inclusion in container return schemes, several countries also include refillable containers under either a voluntary or compulsory refillable deposit requirement*

### 3.1 Types of Containers

Central to all global container return schemes is the selection of eligible containers, underpinned by studies and consultation assessing material and container type. Section 3.1.1 and Section 3.1.2 discuss each of these aspects in further detail. Container size and conditions of acceptance are covered in later sections.

#### 3.1.1 Material Types

The type of material differs amongst the range of containers approved as part of the many global container return schemes (e.g., Australia, United States of America, Canada, Denmark, Norway).

The most common broad container material types comprise of plastic (e.g., polyethylene terephthalate [PET] and high-density polyethylene [HDPE]), aluminium, steel, glass and liquid paperboard (LPB) with variations of these materials accepted depending on the particular global container return scheme conditions of acceptance criteria, availability of end-markets for the material and objectives of each respective scheme (e.g., reduce litter, increase recycling and create job opportunities).

*It is acknowledged that some materials have different end-markets and that for some materials such as plastics numbered 3 to 7 and liquid paper board have little current market demand, with some ending up in landfill. In keeping with achieving a circular economy the recovery and beneficial use of these materials is a requirement of any successful recycling scheme, ideally where demand is greater than supply.*

It is acknowledged that some materials have different end-markets and that some materials such as plastics numbered 3 to 7 and LPB have little current market demand, with some ending up in ruapara - landfill. In keeping with achieving ōhanga āmiomio - circular economy the recovery and beneficial use of these materials is a requirement of any successful recycling

<sup>47</sup> <https://en.mfvm.dk/news/news/nyhed/deposit-on-juice-and-fruit-drink-concentrate-packaging/>

scheme, ideally where demand is greater than supply. In the Aotearoa New Zealand context, it has been suggested that the beneficial use and associated cost of achieving this for different materials should be put back to the producer who would then incorporate this into the cost of the product(s).

In practice, this could be achieved by recognising the different costs of material processing and beneficial use into an 'Advanced Material Recycling Fee' to be applied to those product(s). This Advanced Material Recycling Fee recognises that not all container packaging materials are equal with some more recyclable and valuable than others. In practice this means that materials that are difficult to recycle or problematic such as liquid paperboard (LPB) may need to incur additional cost to see them successfully recycled in keeping with the outcomes of the NZ CRS design while other materials may receive a net income such as aluminium. Approaching this in an open and transparent way will ensure container material choices by beverage producers are recognised and reflects any net cost or revenue that is expected to ultimately be passed on to the customer. Also, in keeping with the outcomes of the NZ CRS design, the non-financial impacts associated with container material choice must be factored in or at the very least provided for to help shape the direction and choice of container material in the future. The AMRF provides the mechanism to achieve this (refer to Section 11 for further discussion). LPB is an example of a material that is difficult to reprocess without the benefit of additional investment and on-going operational costs. This approach may also see a shift towards those materials that are both environmentally and commercially advantageous.

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*Advanced Material Recycling Fees would be associated with currently difficult to recycle materials but the recyclability of which could be achieved by capital investment and development of infrastructure and or exporting to where the technology exists*

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Appendix A includes a list of global container return schemes where information was available on the type of materials accepted. Typically, the reported schemes are focussed on the return of single-use beverage containers, however there was no consistency across the schemes regarding the type of material accepted.

### 3.1.2 Eligible and Ineligible Container Types

In the context of a container return scheme, eligible and ineligible single-use beverage containers are defined by several factors, including the type of container, the size, conditions of acceptance and scheme labelling. This section discusses the type of beverage (e.g., carbonated and non-carbonated soft drinks, alcoholic and dairy beverages) with container size, conditions of acceptance and labelling discussed in later sections.

Appendix A provides a detailed summary of the type of eligible and ineligible single-use beverage containers accepted across the range of international schemes. The information included in Appendix A does not segregate schemes according to the above broad eligible and ineligible container groups due to the complexities in many schemes offering more than one of the above groupings.

#### 3.1.2.1 Eligible Containers

Despite the variability across the range of international container return schemes, including the type of material accepted, most schemes (e.g., Canada [Alberta, New Brunswick], Sweden, Iceland) either include all ready to drink beverages or one or more of the following broad eligible and ineligible container groups (e.g., Norway, Lithuania, Denmark, Australia):

- Carbonated and non-carbonated soft drinks
  - Including energy and sports drinks, cola, and ready to drink cordials
- Fruit and vegetable juice
  - Including coconut juice and fruit juice
- Alcoholic beverages
  - Including, beer, stout, ale, wine, cider and spirits

- Carbonated and mineral water
  - Including sparkling and still water
- Milk products
  - Including milk and drinkable yoghurts (e.g., fermented dairy products)

Broadly, the majority of schemes listed in Appendix A include carbonated and non-carbonated soft drinks, fruit and vegetable juice, alcoholic beverages in the form of beer and some milk products. Appendix A also includes those schemes such as Australia (e.g., South Australia, Queensland, Northern Territory), United States of America (e.g., Iowa), Norway and South Korea that include a broader range of alcoholic single-use beverages, including wine (e.g., wine coolers, wine sachets, wine in aluminium cans) and spirits (e.g., soju) acknowledging that each scheme may have additional specific container size and material compositions associated with these eligible containers (e.g., South Australia wine [straight wine] contained in plastic containers and sachets [plastic and/or foil] less than 250mL<sup>48</sup>).

Further, regarding the inclusion of specific product categories, there was limited publicly available information at the time of writing to provide clarity on the reasons why certain product categories were included or excluded from a scheme. However, the available research suggests that scheme objectives are closely linked to eligible and ineligible containers with many global container return schemes focussed on reducing litter associated with single-use beverage containers. For example, the results of a consumer survey<sup>49</sup> undertaken by the Western Australia Government to inform the design of the container return scheme reported that of the 3,131 respondent's, greater consideration was given to protecting the environment compared with reducing litter and increasing recycling:

- 51.6% to protect the environment;
- 25.7% to reduce litter; and
- 18.5% to increase recycling.

However, as will be discussed in later sections, jurisdictions are becoming more aware of the need to transition from a linear economy to *ōhanga āmiomio* - circular economy with a container return scheme providing a mechanism to support this transition. As such, container return schemes including new and those under review are seeking to support broader resource recovery initiatives.

For example, the recently initiated Scotland deposit return scheme noted that dairy products are often considered as presenting a potential health risk due to containers being returned in an unclean state (e.g., container not rinsed) with the Norwegian scheme referenced to highlight that any hygiene impacts were minimised as containers are collected and processed quickly. Further, it was also reported that a number of dairy products sold in Scotland have a high sugar content and noted that by excluding these items from the scheme may make these products more attractive as the products immediate cost would be lower which may lead to undesirable health outcomes<sup>50</sup>.

### 3.1.2.2 Ineligible Containers

Ineligible containers when referred to in the context of existing international container return schemes, typically include those single-use ready to drink beverage containers greater than the respective scheme eligible container volume (refer to Section 3.2 for further discussion) and specific conditions of acceptance (refer to Section 3.3 for further discussion).

In addition, ineligible scheme containers also commonly include all non-beverage single-use containers, which may include kitchen and laundry products (e.g., detergents), garden shed products (e.g., garden sprays) and bathroom products (e.g., shampoo products).

<sup>48</sup> South Australia Container Deposit Guidelines Beverage Container Approval July 2020

<sup>49</sup> Western Australia Container Deposit Scheme Consultation Summary, 2018 Government of Western Australia Department of Water and Environmental Regulation

<sup>50</sup> A Deposit Return Scheme for Scotland. The Scottish Government 2018

Additionally, in many schemes, suppliers that intend to sell eligible containers outside of a state or country with a scheme are eligible for scheme exemption (e.g., a refund of the scheme deposits) (refer to Section 10 for further discussion).

Appendix A provides detail of those single-use beverage containers that are considered ineligible (e.g., concentrated fruit juice which is not a ready to drink single-use beverage) by each of the listed international container return schemes, with the following broad container type categories as follows:

- Concentrated or diluted fruit or vegetable juice;
- Concentrated or diluted cordials or syrups;
- Health tonics;
- Wines and spirits in glass;
- Milk products; and
- Non-beverage containers.

### 3.1.3 Refillable Containers

As the term suggests, refillable containers (e.g., bottles and/or crates of bottles) are used many times (e.g., in Germany glass bottles are cleaned and refilled up to 50 times and PET bottles around 20 times on average) for filling beverages without undergoing any changes and are typically made of glass or PET plastic<sup>51</sup>. However, it is important to note that a refillable system can be defined several ways including:

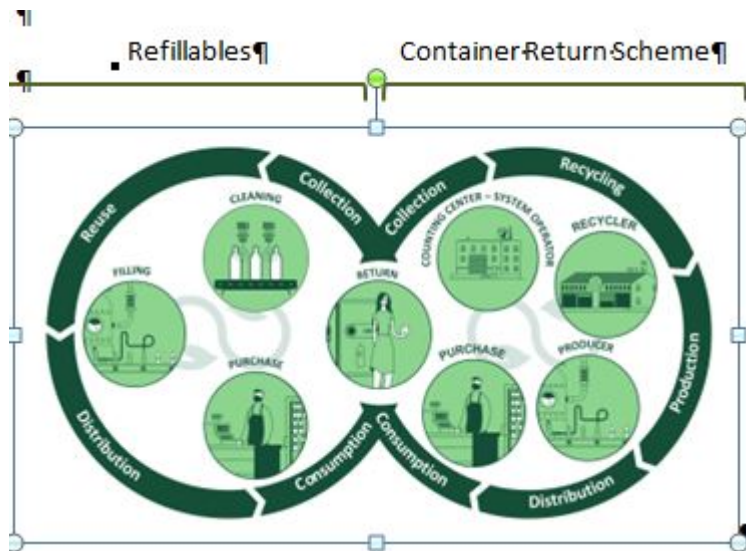
- Bottles that have an associated deposit paid for by the consumer at the time of purchase which is refunded through a reduced price when the empty bottles are returned and replaced (e.g., Associated Bottlers Co. Ltd), or, return of the crate to receive the deposit back (e.g., Oregon Beverage Recycling Cooperative).
- The process by which the consumer pays for a refillable bottle, consumes the product, cleans the beverage bottle and refills at a designated refill station (e.g., Lewis Road Creamery with milk dispensers at selected Tāmaki Makaurau - Auckland Farro stores<sup>52</sup>, Oaklands Milk, Nelson Tasman region<sup>53</sup>).

For the purpose of clarity in developing the NZ CRS design, refillables can be defined as those bottles that have an associated deposit paid for by the consumer at the time of purchase which is refunded through either a reduced price when the empty bottles are returned and replaced, or, return of the crate to receive the deposit back. Further, in the context of a container return scheme, refillables can be either integrated and/or complimentary to a scheme, and may share collection infrastructure, such as, a container return facility (e.g., manual collection depot, Reverse Vending Machine accepting both single-use and refillable containers). Figure 10 below illustrates the similarities between a container return scheme and a refillable scheme, particularly focussing on the point of container return intersection for both schemes.

<sup>51</sup> S. Miller, M. Bolger, L. Copello (2019) Reusable solutions: how governments can help stop single-use plastic pollution. 3Keel, Oxford, United Kingdom. A study by the Rethink Plastic alliance and the Break Free From Plastic movement

<sup>52</sup> [https://www.nzherald.co.nz/the-country/news/article.cfm?c\\_id=16&objectid=12341349](https://www.nzherald.co.nz/the-country/news/article.cfm?c_id=16&objectid=12341349)

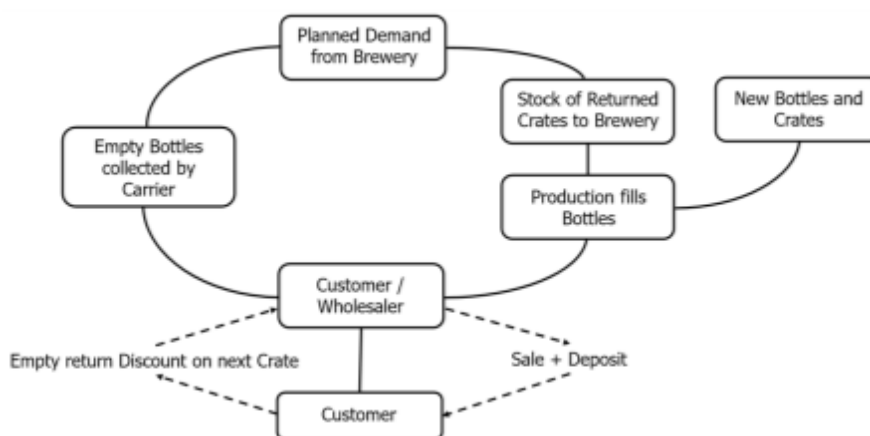
<sup>53</sup> <https://www.oaklandsfarm.co.nz/milk-vending-machine-locations>



**Figure 10: Container return scheme and refillable scheme collection infrastructure**

The following sections further discuss refillables in the context of a container return scheme with case study examples provided of several refillable schemes offered globally to provide information as to the opportunities and constraints associated with encouraging and promoting a New Zealand refillable market alongside a NZ CRS.

Aotearoa New Zealand has operated a national refillable beer bottle system that goes back to 1920 (100 years of operation as at 2020). This system owned and operated by the Associated Bottlers Co. Ltd (ABC), was based on the European model where glass was recognised and valued as a premium material that should be retained and reused. ABC, a joint venture company between Lion and DB, requires consumers to pay an upfront deposit for the crate and bottles (12) and then pay a reduced price when the empty bottles and crate are returned and replaced with a full crate. The bottle size is 1 quart (745mL). Historically ABC provided a refillable bottle size, estimated at 350mL, close to the commonly used 330mL bottle we see today. The logistics arrangements for the service involve ABC supplying new and recycled bottles/crates to DB and Lion Breweries with the breweries responsible for bottle washing onsite and undertaking relevant quality inspections to both bottles and crates before bottling. Figure 11 below illustrates the ABC refillable process flow.



**Figure 11: Associated Bottlers Company Limited refillable process flow<sup>54</sup>**

Furthermore, ABC has reported<sup>55</sup> that the deposit system forms a closed loop process in which the scheme recovery rate is estimated to be between 87% and 92% per annum (8% - 13% of bottles are lost

<sup>54</sup>[https://www.marlborough.govt.nz/repository/libraries/id:1w1mps0ir17q9sgxanf9/hierarchy/Documents/Service s/Recycling%20and%20Resource%20Recovery/CRS/Associated\\_Bottlers\\_Co\\_Presentation](https://www.marlborough.govt.nz/repository/libraries/id:1w1mps0ir17q9sgxanf9/hierarchy/Documents/Service%20Recycling%20and%20Resource%20Recovery/CRS/Associated_Bottlers_Co_Presentation)

from the scheme annually) with ABC refillable bottle stock completely renewed every 10-years with an estimated ABC bottle life span of 10-years. Similarly, the crate option provided by ABC is reported to have a current crate circulation timeframe of approximately 3-months with a crate comprising 12 bottles refilled four (4) times per year. Therefore, the ABC bottle trippage rate is approximately 40 (10-year life span per bottle x a refill rate of 4 times per year) with approximately 385,000 dozen (4.62 million bottles) in circulation at any time. However, ABC have also reported several challenges to the trippage rate including lack of wholesaler collection, brewery washing and refilling infrastructure and a disincentive to return the bottles by consumer, rather than being related to the physical bottle.

Of further note, is that ABC has reported that each bottle prevents the use of 39 one-way 745mL glass bottles or approximately 90 one-way 330mL glass bottles by volume. Additionally, ABC notes that extrapolating these figures to an annual basis results in the potential saving of approximately 14million one-way 745mL glass bottles the equivalent of approximately 31million 330mL glass bottles by volume. In another example, Coca-Cola Brazil claims that their reusable universal PET bottle lasts up to 25 cycles and are recycled at the end of their useful lives, including the reported 100% recyclable labels<sup>56,57</sup>. Additionally, it is reported that Coca-Cola intends to, with the reusable model, replace 200 million single-use bottles per year in Brazil (Coca-Cola Latin America's fastest-growing packaging format in 2018) and increase its 20% volume of returnable packaging (as reported at 2018) to 40% by 2020<sup>58,59</sup>. Further, Coca-Cola Germany is also reported to have released to market a new 1L reusable glass bottle for Coca-Cola Classic and Coca-Cola Zero Sugar, alongside the already in market 1L PET reusable bottle and glass bottles in 200mL, 250mL, 330mL, 500mL, 700mL and 750mL sizes, all of which can be returned for a refund by consumers<sup>60</sup>. While Coca-Cola is reported to provide consumers with a choice of single-use refundable bottles and refundable reusable packaging, Coca-Cola, also claims that 'the material cycle in Germany is nearly closed due to the deposit system', noting that 'all of our PET, glass, tin and aluminium packaging is recyclable'. Of this 99% of all packages are sold with a deposit. The packaging comes back via the deposit system and is refilled (reusable) or recycled (single-use)<sup>61</sup>.

In comparison, single-use containers are typically used once and are then either recycled, used for energy recovery (e.g., known broadly as 'energy from waste' outside of Aotearoa New Zealand) or are disposed of to ruapara - landfill. To increase the recycling of single-use containers, kerbside recycling collections and container return schemes are commonly implemented.

Several global container return schemes (e.g., Germany, Denmark, Ontario, Quebec) combine the recovery of single-use containers via a container return scheme with the recovery of refillable containers for reuse<sup>62</sup> with deposits applied to both refillable and single-use containers (see Appendix A for further deposit information) to ensure one packaging format is not favoured over the other.

However, while there are examples of countries successfully employing the use of refillable containers, globally the refillable market is reported to be declining due to a range of factors including<sup>63,64,65,66</sup>:

<sup>55</sup> [https://www.marlborough.govt.nz/repository/libraries/id:1w1mps0ir17q9sgxanf9/hierarchy/Documents/Service%20and%20Resource%20Recovery/CRS/Associated\\_Bottlers\\_Co\\_Presentation](https://www.marlborough.govt.nz/repository/libraries/id:1w1mps0ir17q9sgxanf9/hierarchy/Documents/Service%20and%20Resource%20Recovery/CRS/Associated_Bottlers_Co_Presentation)

<sup>56</sup> <https://packagingeurope.com/coca-cola-brazil-returnable-bottle-initiative/>

<sup>57</sup> <https://www.foodnavigator-latam.com/Article/2018/11/282/Coca-Cola-Brazil-wants-40-of-its-bottles-to-be-returnable-by-2020>

<sup>58</sup> <https://packagingeurope.com/coca-cola-brazil-returnable-bottle-initiative/>

<sup>59</sup> <https://www.foodnavigator-latam.com/Article/2018/11/282/Coca-Cola-Brazil-wants-40-of-its-bottles-to-be-returnable-by-2020>

<sup>60</sup> <https://www.coca-cola.eu/news/coca-cola-germany-working-towards-a-world-without-waste/>

<sup>61</sup> <https://www.coca-cola.eu/news/coca-cola-germany-working-towards-a-world-without-waste/>

<sup>62</sup> Refillable glass beverage container systems in the UK, 2008

<sup>63</sup> <https://www.reloopplatform.org/beverage-sales-by-container-type-in-austria-16/>

<sup>64</sup> S. Miller, M. Bolger, L. Copello (2019) Reusable solutions: how governments can help stop singleuse plastic pollution. 3Keel, Oxford, United Kingdom. A study by the Rethink Plastic alliance and the Break Free From Plastic movement

- Change in consumer behaviour;
- Cost of system (e.g., infrastructure and transportation);
- Changes in legislation;
- Growth of supermarkets; and
- Improvements in single-use packaging.

Further, while the global refillable market is under pressure from single-use containers, it is acknowledged that resource consumption is increasing with a subsequent growth in the amount of waste produced through packaging. Alongside this complex matter is the impact of a changing global recycling market with countries, including Aotearoa New Zealand, investigating solutions to facilitate ōhanga āmiomio - circular economy outcomes (see Section 2 for further information).

Notwithstanding the complexities associated with establishing a refillable market, further detailed investigation into a complementary and/or integrated refillable market alongside a NZ CRS has been incorporated in subsequent sections and included where appropriate in the design of a NZ CRS (see Section 1.3, Objective 1):

*“Change the way Aotearoa New Zealand values beverage containers that will see increased recycling and new opportunities for refilling.”*

Therefore, establishment of a complementary and/or integrated refillable market alongside a container return scheme will be carried out on a case-by-case basis with consideration given to the following broad elements:

- Economic cost of setting up refillable systems;
- Engagement of retailers in refillable systems;
- Refillable infrastructure (e.g., washing facilities, collection facilities);
- Refillable packaging and incentives to encourage beverage producers to use refillable packaging;
- Marketing of refillable containers (e.g., aesthetics regarding scuffing of containers); and
- Aotearoa New Zealand legislation.

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*While the global refillable market is under pressure from single-use containers, it is acknowledged that resource consumption is increasing with a subsequent growth in the amount of waste produced through packaging. Alongside this complex matter is the impact of a changing global recycling market with countries, including New Zealand, investigating solutions to facilitate circular economy outcomes*

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The following sections provide commentary on refillables with case studies provided where appropriate to illustrate mechanisms that could be utilised to encourage and promote the Aotearoa New Zealand refillable market. Further, acknowledging the existing niche Aotearoa New Zealand refillable market and the complexities involved in integrating this existing market into a NZ CRS design, it is recommended that further work be undertaken during the NZ CRS implementation stage to investigate this further including a detailed feasibility study.

## 3.2 Container Sizes

As discussed in Section 3.1, the size of eligible containers differs amongst the range of international container return schemes with container size typically measured by the volume of product (e.g., millilitres [mL] or litres [L]).

In addition, the sizes of eligible beverage containers may differ depending on the beverage type (e.g., carbonated soft drinks, water). Broadly, where container return schemes are provided to countries comprising no individual states and/or territories (e.g., Germany, Denmark, Lithuania), the size of

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<sup>65</sup> <https://www.reloopplatform.org/resources/reuse/>

<sup>66</sup> The New Plastics Economy Catalysing Action, World Economic Forum, 2017

eligible containers are consistent and are applied at a national level. In comparison, where schemes are provided to countries with states and/or territories (e.g., Australia, Canada, United States of America), there are inconsistencies in the size and type of eligible containers able to be accepted by the relevant State/Territory scheme (Appendix A).

Where information on eligible beverage container sizes was available, the following broad categories apply, whilst acknowledging some containers less than or greater to the accepted sizes may be eligible as part of the relevant scheme (e.g., Yakult 65mL eligible in South Australia) (Appendix A):

- Less than or equal to 3L.
- Less than or equal to 5L.
- 100mL to 3L.
- Greater than 3L.

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*The need to apply refund markings, barcodes and security logos to eligible containers is related to several factors including fraud minimisation and verification of data*

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### 3.3 Conditions of Acceptance

Across the range of international container return schemes, specific conditions of acceptance (e.g., size, type, material) are implemented via legislation to manage the containers eligible as part of the respective scheme. Where information was available, Appendix B sets out the conditions of acceptance for several container return schemes, with the below common compliance measures applied to many eligible containers throughout the various international schemes:

- Containers to be eligible according to the specific scheme acceptance criteria – type, size, material and purchase location.
- Be labelled with a clearly visible mark that shows that the container is included in the scheme (e.g., “10c refund at collection depots/points in participating State/Territory of purchase”).
- Be empty of contents and must not be contaminated with substances that make the container a health risk or unsuitable for recycling.
- Must not be broken or damaged, however it may be crushed depending on the preferences of the recycling centre and/or collection point (e.g., manual collection depot [see Section 4.1.1 for further detail]).

#### 3.3.1 Identifying and Tracking Eligible Containers

Where global container return schemes encounter cross-boundary issues, the application of barcodes and/or other unique scheme labels has been implemented to reduce these cross-boundary issues<sup>67</sup>. Barcodes as well as the specific scheme refund marking provides a means of identifying and verifying eligible containers whilst also providing a means to, for example, minimise fraud.

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*Across the range of international container return schemes, specific conditions of acceptance (e.g., size, type, material) are implemented via legislation to manage the containers eligible as part of the respective scheme.*

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Generally, the benefits of including a barcode on eligible containers are reported to include:

- Efficiency and transparency of data throughout the scheme;
- Accurate data collection for reporting and financial auditing; and
- Anti-fraud measures.

As noted in previous sections, the need to apply refund markings, barcodes and security logos to eligible containers is related to several factors including fraud minimisation and verification of data. Similarly, the application of one (1) or more scheme label options influences the way in which a container is returned to a collection facility and counted. For example, a fully automated system using barcode scanning at all refund points may help to avoid discrepancies and disputes between refund points and

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<sup>67</sup> Review of packaging deposits systems for the UK, 2008



processors, with this option also enabling containers to be baled at the collection facility<sup>68</sup>. However, a barcode scanning system may be difficult for manual collection facilities including those in remote areas, as a barcode scanner will most likely be required to verify barcode eligibility.

Further, in the case of Queensland, Australia, eligible containers manufactured or first sold into the state may also be exported overseas or to another state or territory, in which case an export has occurred. As these eligible containers are exported out of the state and are not consumed or redeemed, they are not considered a cost to the scheme. As such these eligible containers are eligible for an export refund managed by Container Exchange (COEX)<sup>69</sup>.

In the case of Australia and Aotearoa New Zealand, it is acknowledged that while the countries are physically separated, there are agreements in place including the Trans-Tasman Mutual Recognition Act 1997 (Commonwealth Act) that require consideration to ensure recognition of regulatory standards regarding certain goods (e.g., eligible containers) (refer Section 13 for further discussion).

Further, transition period requirements (e.g., eligible container labelling) are commonly put in place to assist producers, manufacturers and retailers to become compliant with scheme requirements.

Three (3) case studies are provided below (Section 3.3.1.1 to Section 3.3.1.3) from New South Wales, Germany and Denmark discussing the ways in which eligible containers are tracked and accounted for in the respective container return scheme.

### 3.3.1.1 New South Wales Case Study

In New South Wales, all eligible scheme containers supplied into the state must be approved by the Environment Protection Authority. Additionally, all suppliers who first supply eligible containers into New South Wales must abide by a further set of requirements, including:

- Must enter into a Supply Arrangement with the Scheme Coordinator (i.e., Exchange for Change) and contribute to the costs of Return and Earn under the agreement; and
- Must ensure that the Environment Protection Authority has granted a container approval for each class of drink container they first supply into New South Wales.

As reported by the Environment Protection Authority, a container approval is granted for each class of eligible container, therefore it is the responsibility of the applicant to check that the container isn't already approved and that it is an eligible container as per the scheme requirements.

Additionally, the New South Wales regulation<sup>70</sup> obligates all beverage suppliers and retailers to label eligible containers with the New South Wales refund marking (i.e., 10c refund at collection depots/points in participating State/Territory of purchase) in clear and legible characters. Additionally, as per the legislation, all container approval holders are obligated to:

- Include a barcode complying with the barcode requirement; and
- Are prohibited from supplying containers belonging to a class that are made primarily of metal and must not have an opening mechanisms that is a ring-pull mechanism or any other mechanism that is designed to result in, or that is reasonably capable of resulting in, separation from the container of any part of the container.

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*Further, transition period requirements (e.g., eligible container labelling) are commonly put in place to assist producers, manufacturers and retailers to become compliant with scheme requirements.*

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<sup>68</sup> A model framework for a container refund scheme in Tasmania (Consultant report), Tasmanian Environmental Protection Authority, 2018

<sup>69</sup> Queensland Container Export Protocol, EPA2018P1085

<sup>70</sup> New South Wales Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation 2017

A container may be rejected for approval by the Environment Protection Authority according to the requirements as specified in Clause 24<sup>71</sup>, including where the Environment Protection Authority considers that the material of which the container is composed (including any labelling) is not suitable for recycling, reuse or, having regard to the objects of the Act, any other appropriate means of disposal.

In the case of barcodes, all eligible containers must also bear either a GTIN (Global Trade Item Number) barcode<sup>72</sup> or comply with the GS1 standards<sup>73</sup> and be between 8-13 digits.

### 3.3.1.2 German Case Study

In Germany, to be eligible for a refund, the packaging must be marked with the security logo, a barcode and the Deutsche Pfandsystem GmbH (DPG) logo. To obtain the special inks required for the security logo, label printers and can makers must be registered and certified with DPG<sup>74</sup>. Further, the DPG implemented a barcode system<sup>75</sup> that uses a printing technology to print the DPG logo (i.e., the security mark) on eligible containers and which cannot be replicated by usual copying facilities. The barcode must be printed on the container label, directly on the container (applies to metal containers) or on special labels only including the barcode and the security mark (used by importers marketing foreign containers which carry no security mark on the original label). The intent of this unique barcode system is to be an anti-fraud measure to prevent or at least minimise fraud<sup>76</sup>.

### 3.3.1.3 Danish Case Study

The Danish container system (Dansk ReturSystem) requires all importers and producers that market and sell eligible beverages in single-use (i.e., one-way) packaging in Denmark to register with the Danish deposit (comprises the deposit mark together with a unique (Denmark only) or global GS1 barcode and GTIN) and return system to apply both a deposit mark and a self-adhesive deposit label<sup>77</sup>. Both the Danish deposit mark and the self-adhesive deposit label are registered trademarks owned by the Dansk ReturSystem. Where eligible products are exported from Denmark these are prohibited from being marked with the Danish deposit trademark but may still include the global barcode<sup>78</sup>. Given the need to manage potential system fraud and the complexities associated with the exported products, the Dansk ReturSystem recommends eligible containers to be sold in Denmark only be marked with an exclusive unique barcode and GTIN<sup>79</sup>.

Once the container is registered, the Dansk ReturSystem will determine whether a primary or secondary marking will be applied to the specific eligible container (i.e., glass bottles and aluminium cans less than 1L, plastic bottles less than 1L and all bottles and cans of 1-20L<sup>80</sup>). This means the applicant is granted a licence to use the trademark and to print the deposit mark directly onto the packaging (e.g., directly onto the can or on the original label of the packaging), or manually attach it<sup>81</sup>.

<sup>71</sup> New South Wales Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation 2017

<sup>72</sup> Defined in the New South Wales Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation 2017 regulation as a product barcode that contains a Global Trade Item Number (GTIN) encoding and complies with the GS1 Standard

<sup>73</sup> Defined in the New South Wales Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation 2017 means the GS1 General Specifications standard published by GS1 AISBL

<sup>74</sup> Review of packaging deposits systems for the UK, 2008

<sup>75</sup> <http://anker-andersen.dk/deposit-laws/germany.aspx>

<sup>76</sup> <http://anker-andersen.dk/deposit-laws/germany.aspx>

<sup>77</sup> <https://www.danskreturssystem.dk/en/importer-producer-intermediaries/om-engangsemballage-engelsk/>

<sup>78</sup> Secondary marking of one-way packaging manual, Dansk ReturSystem, 2014

<sup>79</sup> Primary marking of one-way packaging, Dansk ReturSystem, 2015

<sup>80</sup> <https://www.danskreturssystem.dk/en/all-about-deposits/deposit-amounts/>

<sup>81</sup> <https://www.danskreturssystem.dk/en/importer-producer-intermediaries/om-engangsemballage-engelsk/>

Briefly, a primary marking is a deposit mark that is printed directly on the packaging or on the label of the original packaging and purchased from the Dansk ReturSystem at the time of application<sup>82</sup>. The types of labels associated with the primary marking are:

- A deposit mark with a global barcode and GTIN; and
- A deposit mark with a unique barcode and GTIN – exclusively used for Denmark.

A secondary marking is a deposit mark that involves manual marking using a self-adhesive deposit label that importers and producers purchase from the Dansk ReturSystem and attach to the packaging<sup>83</sup>. The self-adhesive deposit labels produced by the Dansk ReturSystem are printed with a special security imprint to prevent copy fraud and to ensure that the correct deposit is paid<sup>84</sup>.

The use of self-adhesive deposit labels is managed by the Dansk ReturSystem whereby labels can come with or without a barcode and the associated GTIN<sup>85</sup>. It is up to the applicant to choose which marking category is to be used when registering an eligible container. The types of self-adhesive labels are:

- Self-adhesive deposit labels without a barcode are used when the product that requires marking has an original barcode that a reverse vending machine can read; and
- Self-adhesive deposit labels without a barcode are used when the product that requires marking does not have a barcode or has a barcode that a reverse vending machine cannot read.

For imported products, it is the responsibility of the person(s) selling the product in Denmark to ensure the producer creates a label incorporating the Danish deposit mark (i.e., primary marking). Where a producer does not agree to incorporate the deposit mark, the secondary marking (i.e., manual marking using the self-adhesive deposit label) combined with the producer's original label can be used<sup>86</sup>.

Further, the type of deposit label material must be considered, as any other material other than paper may require higher fees if the label subsequently requires special handling of the packaging. For example, the Dansk ReturSystem notes that if materials are mixed such as a plastic label on metal this may influence the size of the fee.

## 3.4 Potential Target Containers

As discussed in Section 3.1 and Section 3.2, each of the international container return scheme designs include a range of single-use beverage container materials, product types and sizes, leading to inconsistencies between states/territories and countries. The reasons for such inconsistencies are wide and complex and often apply to the location in which the scheme applies. For example, the South Australian scheme started in 1977 with the aim to reduce litter (note: prior to 1977 refillable glass bottles for beer and soft drinks were collected via voluntary schemes established by the manufacturers of those beverages<sup>87</sup>). Since then, the scheme has been reviewed and extended to cover other frequently littered containers including flavoured milk, juice and waters prevalent in the litter stream<sup>88</sup>.

### 3.4.1 South Australian Case Study

The South Australian scheme is currently progressing through a review process with consulted stakeholders (general public<sup>89</sup> and industry stakeholders<sup>90</sup>) having provided feedback which indicates 84% community support for the inclusion of more containers in the scheme, followed by 96% of the community not supporting the removal of any items from the current scheme<sup>91</sup>. The list of containers<sup>92</sup>

<sup>82</sup> Primary marking of one-way packaging, Dansk ReturSystem, 2015

<sup>83</sup> Secondary marking of one-way packaging manual, Dansk ReturSystem, 2014

<sup>84</sup> Primary marking of one-way packaging, Dansk ReturSystem, 2015

<sup>85</sup> Secondary marking of one-way packaging manual, Dansk ReturSystem, 2014

<sup>86</sup> Primary marking of one-way packaging, Dansk ReturSystem, 2015

<sup>87</sup> Improving South Australia's Recycling Makes Cents Scoping Paper – Consultation Summary Report May 2019

<sup>88</sup> Improving South Australia's Recycling Makes Cents Scoping Paper – Consultation Summary Report May 2019

suggested by the South Australian government for inclusion in an expanded scheme included wine and spirit bottles, 2L and 3L milk (and flavoured milk) containers, 3L+ juice containers, PET (fluorescent green, white, clear containers), some/all forms of LPB. Consultation feedback suggested an expanded list would help to increase recycling and resource recovery, encourage the *ōhanga āmiomio* - circular economy and reduce litter and landfill whilst also noting that less consumer confusion would occur if non-container return scheme containers that are of the same size or material as scheme containers are included in the future.

Further, it was reported that milk and juice are primarily excluded from the Australian schemes because when the South Australian scheme was introduced in 1977, many argued that milk and juice (in addition to wine and spirits) were consumed at home and did not contribute to the litter stream. Milk and juice were excluded on this basis in South Australia. When the other container deposit/return schemes were introduced in the other Australian jurisdictions, the scope of containers followed what was already implemented in South Australia<sup>93</sup>. Since then however, it has been argued that the scope of containers should change and include milk and juice, to keep up with the changing core strategy of the schemes which is also evolving from when they were first implemented. When the South Australian scheme was first introduced, the objective of the scheme was to reduce litter, and hence the exclusion of milk and juice could be justified. Since then, the core objective has become to increase recycling rates. Using this basis, some have considered that milk and juice (in addition to wine and spirits) should be introduced to the eligible scope of containers. This is said to be in the spirit of true circular economy and will help drive a circular recycling economy<sup>94</sup>.

After Australia experienced the negative impacts of China's ban of imported recyclable materials, a number of Australian recycling bodies expressed the need of container return schemes to expand their scope of containers to include beverages such as juice and wine. East Waste, which collects recycling from seven (7) councils in South Australia, stated that the scope of containers should be expanded in order to better protect recyclable scrap from ending up in landfill. It was stated that glass jars and containers, including those for juice, that end up in kerbside recycling are down cycled rather than recycled since the glass is broken down in kerbside bins, and hence often ends up in landfill. In a paper to the South Australian Environment Protection Authority, the Waste Management and Resource Recovery Association (WMRR) of Australia stated that the scheme, which started as a scheme against littering, is a product stewardship scheme and hence should encompass more beverage containers, including juice and dairy products<sup>95</sup>.

As part of the Scottish scheme, HDPE containers are excluded, which means that most milk beverages are excluded. Milk or milk-related beverages sold in PET, glass or cans are included<sup>96</sup>.

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<sup>89</sup> General public comprised, 42 comments received via the South Australian Governments YourSAY community consultation website, 1001 respondents via an online questionnaire (general public), 16 emails and posted letters to the EPA and Members of Parliament and 28 comments received via social media.

<sup>90</sup> Industry stakeholders comprised, 7 Container Deposit Operator, 17 beverage production/sales organisations, 29 wine industry members, 15 industry organisations, 3 environment and community groups, 9 local government organisations, 3 Members of Parliament and the Legislative Council.

<sup>91</sup> Improving South Australia's Recycling Makes Cents Scoping Paper – Consultation Summary Report May 2019

<sup>92</sup> Improving South Australia's Recycling Makes Cents Scoping Paper – Consultation Summary Report May 2019

<sup>93</sup> Container Deposit Systems, 2019, Should we extend items eligible for container deposit schemes, available from: <https://www.containerdepositsystems.com.au/articles/eligible-items-for-container-deposit-schemes>

<sup>94</sup> Container Deposit Systems, 2019, Should we extend items eligible for container deposit schemes, available from: <https://www.containerdepositsystems.com.au/articles/eligible-items-for-container-deposit-schemes>

<sup>95</sup> ABC NEWS, 2019, Recycling bodies call for expansion of container deposit scheme in SA, available from: <https://www.abc.net.au/news/2019-07-30/should-south-australias-deposit-container-scheme-be-expanded/11317302>

<sup>96</sup> Zero Waste Scotland, 2019, Frequently Asked Questions, available from: <https://depositreturnscheme.zerowastescotland.org.uk/faqs#What's>

The inclusion of wine and spirit containers across the international container return schemes is varied with many schemes excluding wine or spirits contained in glass containers (e.g., Australia, Lithuania, Denmark) but including wine and spirits contained in other material types such as cardboard casks, plastic sachets, foil pouches or aluminium cans (e.g., Australia, Norway, Croatia) (Appendix A). Of the information gathered from the current South Australian review process, it was reported that the majority of submissions advocating for the inclusion of wine bottles in the scheme noted the inclusion of this container type would increase the glass recycling rate in South Australia (the scheme return rate for glass in South Australia reported in 2019 was 84.9% and approximately 34,667 tonnes of glass beverage containers were sent for recycling<sup>97</sup>) and reduce the contamination issues associated with glass fines in the kerbside recycling stream<sup>98</sup>. The consultation feedback also noted that if *'more glass products could be incentivised for removal from the kerbside collection, this would result in greater amount of glass being recycled and improve the quality and value of glass and other recyclables'*. The results of a consumer survey undertaken by the Western Australia Government to inform the design of the Western Australian container return scheme reported that approximately 20% of the submissions received supported alignment of the schemes eligible containers with the other Australian state container return schemes, with other submissions also recommending the scope of eligible containers be expanded, including for wine bottles<sup>99</sup>. At this time however, the Western Australian scheme has decided to align the scope of containers with the New South Wales and Queensland schemes with any future amendment to the scope of containers to be coordinated with other states and territories.

However as acknowledged in Section 2, consideration of product end-markets (i.e., supply and demand) needs to be fully understood including longevity of markets and security of product supply (Tranche 3 will further discuss end-markets). In addition, consultation feedback regarding glass contamination, noted colour separation of glass was more efficient through a container return scheme which could add further value and resale opportunity for the recovered glass. Lastly, the South Australian consultation feedback suggested that if wine bottles and other glass containers were to be added to the scheme's list of eligible containers this could potentially drive the recycling sector to invest further (potentially locally) in glass recycling; however no further information was included to discuss how this might occur. Additionally, as reported by the Local Government Association of South Australia<sup>100</sup>, the container deposit scheme is recognised as an important resource recovery measure for glass, as it provides a method of ensuring that as much glass as possible is returned for recycling, including directly outside the kerbside collected bin system. As reported, the two (2) key reasons why the inclusion of glass in the South Australian container system is important are as follows:

Firstly, it is recognised that glass is a high value material if recovered in a 'clean' state, and as reported by the Local Government Association of South Australia, the container return scheme enables glass to retain a higher value as cleaner glass is recovered due to colour type sorting<sup>101</sup>.

Secondly, the Local Government Association of South Australia notes glass disposed of through the kerbside service is responsible for a significant proportion of the cost to councils of providing recycling services and glass fines (defined as glass broken into very small pieces) that cause a number of problems in the recycling process<sup>102</sup>:

<sup>97</sup> <https://www.packagingcovenant.org.au/documents/item/2177>

<sup>98</sup> Improving South Australia's Recycling Makes Cents Scoping Paper – Consultation Summary Report May 2019

<sup>99</sup> Western Australia Container Deposit Scheme Consultation Summary, 2018 Government of Western Australia Department of Water and Environmental Regulation

<sup>100</sup> Single-Use Plastics and the Container Deposit Scheme, Local Government Association of South Australia, Submission, 2019

<sup>101</sup> Single-Use Plastics and the Container Deposit Scheme, Local Government Association of South Australia, Submission, 2019

<sup>102</sup> Single-Use Plastics and the Container Deposit Scheme, Local Government Association of South Australia, Submission, 2019

1. Councils are charged a per tonne processing fee for recyclable materials and glass contributes to this processing fee (i.e., it now costs Material Recovery Facilities more to process recyclable materials than they can make back through selling the materials recovered and councils pay for this shortfall). Again, glass (if broken) will have no value and will be a cost to the processor;
2. This cost is separately passed on to councils. Glass that breaks at any point (through collection, transportation or processing) will be recorded as “contamination” for which a number of councils are now being charged as part of their recyclables processing contracts; and
3. Glass fines also contaminate the other materials and impact on their value (again, increasing the disparity between the cost of processing and the value of materials recovered).

It was further reported<sup>103</sup>, that the more glass that can be recovered through the container return scheme outside of the kerbside collected system, the greater the opportunity that councils will be able to manage the increase in waste costs without passing these onto communities.

In addition to public support for an expanded list of eligible containers, consultation feedback<sup>104</sup> reported ‘local councils in South Australia advocated that including glass, milk and juice containers may reduce waste management fees as the value of these containers would increase and therefore would be diverted from kerbside collections’<sup>105,106</sup>.

In comparison South Australian industry organisations, including wine industry representatives, manufacturers and retailers and grape growers are of the view to exclude the inclusion of wine and spirit bottles to the scheme due to concerns about the costs (e.g., administrative/business/direct costs to packaging and marketing, registration fees, cash-flow security, refund management and export costs) to hotels, wine and beverage producers and bottle shops. It was claimed that these costs would increase pressure on sustainability and reduce the ability for producers to be competitive with many concerns focussing on the costs of re-labelling wine and spirit bottles which have a long shelf-life. Additionally, it was claimed that should wine bottles be included in the South Australian scheme, other aspects in the wine-growing/manufacturing/sales and consumption supply/value chain will suffer, resulting in:

- Job losses;
- Industry stagnation;
- Potential damage to the wine tourism industry<sup>107</sup>;
- Increased costs to consumers and increased opportunities for cross-border arbitrage;
- Concern that there is a lack of recycling infrastructure and capacity for an expanded list of scheme containers; and
- Wine bottles are not highly prevalent in the litter stream and therefore not relevant to the aims of the South Australian scheme.

Industry feedback also claimed to support the exclusion of the following items from an expanded scheme, however no reasoning for the suggested exclusions was provided:

<sup>103</sup> Single-Use Plastics and the Container Deposit Scheme, Local Government Association of South Australia, Submission, 2019

<sup>104</sup> Improving South Australia’s Recycling Makes Cents Scoping Paper – Consultation Summary Report May 2019

<sup>105</sup> Improving South Australia’s Recycling Makes Cents Scoping Paper – Consultation Summary Report May 2019

<sup>106</sup> Single-Use Plastics and the Container Deposit Scheme, Local Government Association of South Australia, Submission, 2019

<sup>107</sup> The direct cost of including wine bottles in the South Australian scheme was estimated to be \$4.5-\$5 million per annum, however this was reported from a single submission only the details of which was not disclosed in the report (Improving South Australia’s Recycling Makes Cents Scoping Paper – Consultation Summary Report May 2019).

- 3L containers;
- Takeaway cutlery/utensils because they should be separately regulated and transitioned to compostables;
- Items managed by other means; and
- Items that have been proposed for banning under the scheme.

Further, consultation feedback regarding eligible and ineligible containers, noted community and stakeholder responses were generally supportive of changes to the operation of the scheme, with suggested collated modifications including<sup>108</sup>:

- Banning the sale of non-recyclable items;
- Implementation of fines and incentives to increase compliance;
- Adding ways for consumers to drop off containers and to collect and receive deposit refunds; and
- Advancing the aims of the scheme, including:
  - Reduction of litter;
  - Reduction of waste to landfill;
  - Increasing recycling rates and resource recovery; and
  - Promoting the efficient operation and administration of the scheme.

Regarding the ‘banning of sale of non-recyclable items, reported consultation feedback was varied with some in favour of using legislation to ban some containers (and other challenging items) from use, while other feedback noted there were other ways of effecting removal that did not require a ban or legislation. Suggested items as reported that could, or should, be removed from use were:

- Generally, containers that cannot easily be recycled;
- Generally, containers that have the potential to cause environmental harm;
- Complex beverage containers such as juice or yoghurt squeeze packs, particularly those wrapped in a soft plastic layer of “sleeves”/with excessive packaging, flexible plastic or aluminium foil packaging;
- Items comprising several different plastics/materials;
- “Over-packaged” items; and
- Items made from liquid paperboard (e.g., UHT, Tetra Pak containers).

As reported from the consultation, the following list summarises the suggested ways of removing the above items from sale or use:

- South Australian Container Deposit Scheme legislation;
- Other legislation;
- National/state product manufacturing and packaging guidelines, preventing registration/sale of non-compliant packaging and materials;
- National bans and restrictions versus state-based ones (to reduce jurisdictional confusion and costs); and
- Develop recycling technology to overcome challenges to recovery.

### 3.4.2 Scottish Case Study

As at September 2019, legislation was laid to the Scottish Parliament to introduce a deposit return scheme for drinks containers – the first national mandatory scheme to be implemented in the United Kingdom. The scheme is intended to be available across Scotland with the scheme including all drinks sold in PET plastic, metal and glass. The deposit has been reported as 20p (equivalent to

<sup>108</sup> Improving South Australia’s Recycling Makes Cents Scoping Paper – Consultation Summary Report May 2019

approximately NZD40-cents) to be paid by the consumer at the time of purchasing a drink in a single-use container. The consumer can then get the deposit back when the empty container is returned to one of 17,000+ retail return points. Once the Scottish Parliament passes the regulations, an implementation period of approximately 12-months is expected before the scheme begins.

Of the information presented by Zero Waste Scotland<sup>109</sup>, 77% of the Scottish people want a deposit return scheme. However, British Glass, the representative body for the UK glass industry whilst not opposed to a deposit return scheme in principle notes the inclusion of glass in the proposed scheme will reduce glass recycling rates, pass massive costs onto consumers and incentivise producers to fill plastic bottles not glass<sup>110</sup>. Figure 12 below provides a summary of the key reported benefits of the proposed Scottish scheme.

<b>20p</b> deposit on drinks containers	<b>77%</b> of Scots want a Deposit Return Scheme	<b>31,000</b> fewer plastic bottles littered every day	<b>67,000+</b> additional tonnes recycled each year
<b>17,000+</b> return points nationwide	<b>90%</b> of containers included in the scheme will be captured for recycling	<b>£61million</b> a year could be saved tackling the indirect impacts of litter	<b>4million</b> tonnes of CO <sub>2</sub> eq emissions will be cut over 25 years

**Figure 12: Reported benefits of the proposed Scottish scheme<sup>111</sup>**

Amongst the information provided by British Glass regarding why a deposit return scheme will disrupt glass recycling and therefore not achieve a circular economy in Scotland, the deposit scheme was noted as only providing manufacturers with more coloured glass and not the clear glass they need to supply the Scottish spirits market. Also noted was that the deposit scheme ‘cherry picks’ the easy-to-recycle glass beverage bottles from kerbside collections, leaving the remaining food glass packaging to be handled by kerbside collections along with all other waste streams. It was reported that this ‘cherry picking’ can make kerbside collections for glass unviable meaning more glass will be sent to landfill.

British Glass also notes that the top four performing glass recycling schemes in Europe (Slovenia, Belgium, Luxembourg and Sweden) operate an Extended Producer Responsibility (EPR) scheme for glass<sup>112</sup>. As reported, EPR schemes in Europe are covered by the European Union (EU) Packaging Directive which means obligated producers<sup>113</sup> must pay fees to cover the end of life costs of their packaging (i.e., its collection, recycling and disposal). Further, every time an obligated producer (e.g., brand) puts a packaged product on the market, it must pay a fee.

Additionally, the UK currently operates a market-based model, called the Packaging Recovery Note (PRN) which means obligated producers have to buy PRNs (1 PRN / 1 tonne) from waste re-processors or packaging companies to offset their packaging use against the recycling target. If the target is not being met, the PRN price goes up; if the target is met the PRN goes down. This market-based model is considered an important funding mechanism to support the UK’s waste and recycling infrastructure as the sale of PRNs (via accredited re-processors and exporters – to be discussed further in Section 7,

<sup>109</sup> <https://depositreturnscheme.zerowastescotland.org.uk/>

<sup>110</sup> Recycling DRS for Scotland and glass – British Glass Key Messages

<sup>111</sup> <https://depositreturnscheme.zerowastescotland.org.uk/>

<sup>112</sup> Recycling DRS for Scotland and glass – British Glass Key Messages

<sup>113</sup> Businesses that handle over 50 tonnes of packaging annually and have an annual turnover of £2 million are required to meet a share of the UK annual packaging waste recycling targets. These businesses are called ‘obligated’ or ‘obliged’ businesses or producers. [https://consult.defra.gov.uk/environmental-quality/consultation-on-reforming-the-uk-packaging-produce/supporting\\_documents/packagingepiconsultdoc.pdf](https://consult.defra.gov.uk/environmental-quality/consultation-on-reforming-the-uk-packaging-produce/supporting_documents/packagingepiconsultdoc.pdf)



Section 8 and Section 17) can only be used to benefit the waste system. Organisations such as Valpak provide a Packaging Compliance Scheme whereby PRNs of the relevant type and quantity are purchased in order to offset Valpak member obligations in materials including aluminium, glass, paper, plastic, recovery (energy from waste), steel and wool<sup>114</sup>. However, research suggests that there are growing calls for this system to be reformed, although no further publicly available information was available at the time of writing.

In comparison, in Aotearoa New Zealand, the Glass Packaging Forum (NZGPF) operates a voluntary scheme that aims to ‘ensure that as much container glass as possible is diverted from landfill to benefit New Zealand’s community and the environment’<sup>115</sup>.

As the scheme is voluntary and not a mandated glass kaitiakitanga whakanaonga - product stewardship scheme as seen in Europe, funding of the scheme is based on the payment of voluntary levies from companies that are part of the NZGPF membership. Unfortunately, no publicly available information was available at the time of writing regarding the financial levy arrangement, overall cost of service and recovery, extent of geographical service coverage across Aotearoa New Zealand, and so no further information can be provided at this stage. As reported by the NZGPF, these levies are used to fund projects, research, infrastructure and educational programmes to increase the recycling and reuse of glass into either new glass containers or for alternative uses that lead to a reduction in waste container glass to landfill<sup>20</sup>.

### 3.5 The Aotearoa New Zealand Context

As discussed throughout this section, the scope of containers is the central component of the NZ CRS design as this sets the specific eligible scheme containers, and by association, those containers that are ineligible (i.e., those containers that are not accepted by the scheme for the deposit refund).

It is acknowledged that many global container return schemes have been established to accept single-use beverage containers comprising, for example, carbonated and non-carbonated soft drinks, alcoholic and dairy beverage containers made of plastic (e.g., polyethylene terephthalate [PET] and high-density polyethylene [HDPE]), metal (including aluminium and steel), glass, liquid paperboard with variations of these materials accepted depending on the particular container return scheme. While the size of eligible containers varies amongst the range of container return schemes, many schemes are reported to include containers up to 5L with some schemes accepting containers up to 20L. Excluded from the majority of container return scheme are non-beverage containers, for example, kitchen, laundry, bathroom, garage and garden products, although there is growing awareness that container return schemes should incorporate flexibility into their design and scheme review periods to potentially expand the list of eligible scheme containers. While this has been reported to be partly driven by jurisdictional waste and resource management objectives (e.g., increasing recycling rates, *ōhanga āmiomio* - circular economy outcomes), there is information from several global container return schemes suggesting that the consumer would support a wider range of eligible containers to be included in the scheme.

Taking the learnings from the global container return schemes, feedback received from the Scheme Design Working Group (SDWG) and acknowledging that the NZ CRS would be a new national initiative, it is recommended that the NZ CRS is initially established to include all single-use beverage containers supported by a bespoke NZ CRS legislative instrument that enables the scope of containers to be expanded in the future (i.e., to include, for example, kitchen, laundry, bathroom, garage and garden products). Further, it is acknowledged that the results of a ConsumerNZ survey undertaken in early 2020 notes 64% of 2,114 respondents noted that all containers made of plastic, glass and metal should be included in the NZ CRS, with drop in support for plastic and glass at 15%, plastic only at 6% with the remaining 15% either noting other types of materials or were undecided (see Section 6 for further discussion). 67% of respondents also noted the NZ CRS must be easy to understand what containers are

<sup>114</sup> <https://www.valpak.co.uk/compliance/packaging-compliance/recycling-evidence>

<sup>115</sup> <https://www.glassforum.org.nz/how-it-works/>

covered with a further 62% of respondents noting the need for good information to be provided to consumers about how the scheme works, which includes the type of eligible containers.



**Figure 13: What type of container should the New Zealand Container Return Scheme include?<sup>116</sup>**

Acknowledging the NZ CRS and consumer interface, a further important consideration is the availability of end-markets for scheme collected material (e.g., markets for PET and glass). As will be discussed throughout later sections container return schemes globally were commonly based on an objective to increase jurisdictional recycling rates, however, there is growing global awareness of the need to transition from a linear (take-make-dispose) economy to *ōhanga āmiomio* - circular (make-use-return) economy building on the principles of the *pūnaha whakarōpū para* - waste hierarchy of reduce, reuse, recycle. However, it is acknowledged that in the Aotearoa New Zealand context, this transition will take time and, for example, industry support and a range of other factors need to be assessed and developed, including the establishment of material re-processing infrastructure and establishing pull-through demand of materials. Additionally, this transition may also support the reinvigoration of the Aotearoa New Zealand refillables market which the NZ CRS may be able to support.

Further, to assess the total number of eligible beverage containers in Aotearoa New Zealand and the total weight of container material types, PwC was commissioned in 2020 to develop a financial model to understand the cashflows (revenues and costs) of operating a NZ CRS underpinned by data including total eligible containers in Aotearoa New Zealand (see Section 11) for further discussion). Based on GS1 data, local council provided data and feedback received from the SDWG, the total number of eligible scheme containers in Aotearoa New Zealand at the NZ CRS 'go live' date of 01 July 2022 is expected to be approximately 2.3billion non-alcoholic and alcoholic containers (comprising approximately 790million plastic, 125million liquid paperboard, 510million metal and 925million glass containers).

Looking at these numbers in more detail, the total non-alcoholic and alcoholic container count can be split into the following categories, including the associated container count numbers:

- Non-alcohol (approximate container count) – 1.3billion
  - Other non-alcohol – 150million
  - Ambient juices – 30million
  - Carbonated beverages – 380million
  - Chilled juice and drinks – 28million
  - Milk products – 635million
  - Water – 110million
- Alcohol (approximate container count) – 1billion
  - Wine – 120million
  - Cider – 43million
  - Beer – 615million
  - Other alcohol – 230million

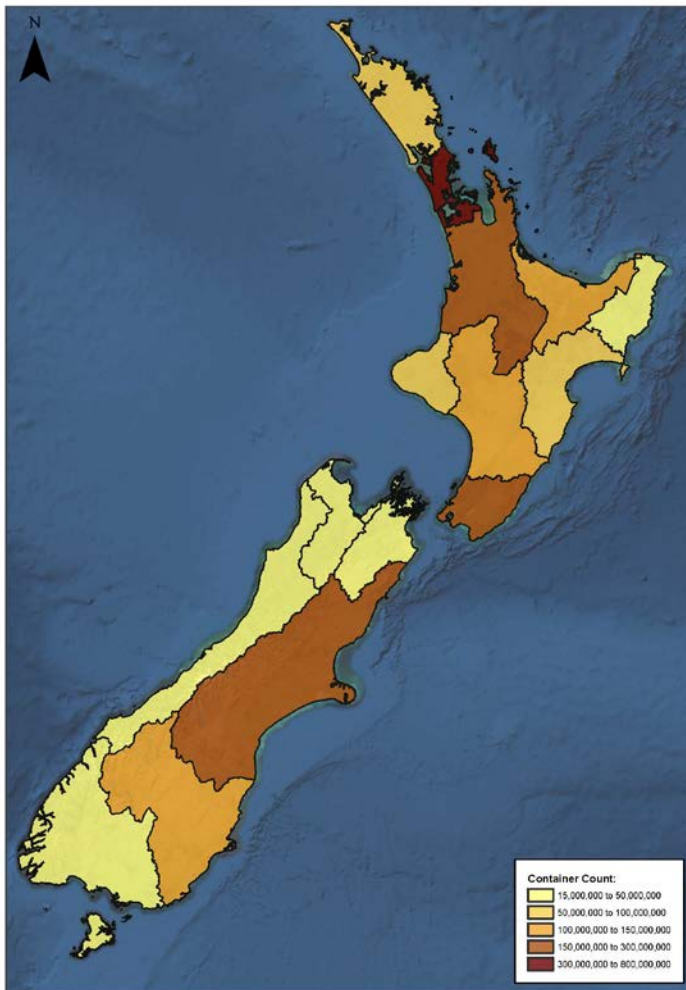
<sup>116</sup> ConsumerNZ Beverage Container Return Scheme Survey: Key Results 2020

Using the container count numbers, the estimated weight of containers sold in 2019 (Appendix I) were as follows (Table 7):

**Table 7: Estimated weight of containers sold in Aotearoa New Zealand in 2019**

Total weight (tonnes)		Material Type				
		Plastic	Liquid Paperboard	Metal	Glass	Total
	Ambient Drinks	1,591	995	48	96	2,729
Beverage Type	Ambient Juices	1,161	1,131	11	472	2,775
	Carbonated Beverages	2,707	-	5,211	39,485	47,404
	Chilled Juice & Drinks	1,086	32	140	765	2,023
	Flavoured Milk	766	-	-	-	766
	Lifestyle Drinks	2,709	2,004	132	9,956	14,801
	Liquid Breakfast	-	1,781	-	-	1,781
	UHT Milk	1,755	4,965	7	526	7,252
	Water	10,421	144	402	9,856	20,823
	Fresh Milk	9,684	1,542	-	-	11,226
	<b>Total (Non-Alcohol)</b>	<b>31,881</b>	<b>12,592</b>	<b>5,951</b>	<b>61,155</b>	<b>111,579</b>
	Wine (includes sparkling and champagne)	7	34	18	67,440	67,499
	Cider	198	-	70	10,860	11,129
	Beer	537	-	1,476	78,287	80,300
	Spirits	61	2	-	12,894	12,958
	Spirit Based Drinks	104	-	958	19,476	20,538
	<b>Total (Alcohol)</b>	<b>907</b>	<b>36</b>	<b>2,523</b>	<b>188,958</b>	<b>192,424</b>
<b>Total</b>	<b>32,788</b>	<b>12,628</b>	<b>8,474</b>	<b>250,113</b>	<b>304,003</b>	

Taking the above container count data into account and applying the population across the sixteen (16) Aotearoa New Zealand regions, the following map illustrates the proportion of eligible scheme containers by region (Figure 14). Clearly, container count is highest in the more densely populated regions, for example, Tāmaki Makaurau- Auckland, Waikato, Te Whanganui-a-Tara - Wellington, Waitaha – Canterbury, with a greater proportion of eligible scheme containers available in the North Island compared with the South Island. As will be discussed in Section 4 and Section 7, knowledge of the regional proportion of eligible scheme containers will help to inform the location and number of container return facilities to provide the consumer with an accessible and convenient service, as well as understanding the location and required numbers of dedicated scheme container processing facilities.



**Figure 14: Regional container count**

Further, while it is not the intent of this section to restate the research findings discussed throughout this section, it is important to note the following non-exhaustive list of components that influence the NZ CRS scope of containers and which are discussed in more detail in the following sections:

- Container verification and fraud (i.e., eligibility criteria);
- Collection of containers (i.e., container return facilities);
- Value of scheme material;
- Container labelling (e.g., scheme logo, QR code, deposit value); and
- On-shore Aotearoa New Zealand material re-processing capacity.

### 3.6 Summary of Key Findings

The outcomes of the above research show that there is a wide range of containers existing in the various global container return schemes and that there is variability on the inclusion of materials namely, glass, plastic, metals and liquid paperboard. Further, some schemes may include glass but may exclude specific material types such as liquid paperboard and/or products such as wine.

Taking all the above into consideration and specifically:

- Typically, global container return schemes include all single-use beverage containers comprising the broad material categories of glass, plastic, aluminium, steel and liquid paperboard (LPB) with variations of these materials accepted depending on the particular global container return

scheme conditions of acceptance criteria, availability of end-markets for the material and objectives of each respective scheme (Section 3.1);

- Eligible and ineligible single-use beverage containers are defined by several factors, including the type of container, the size, conditions of acceptance and scheme labelling (Section 3.1);
- Despite the variability across the range of international container return schemes, including the type of material accepted, most container return schemes either include all ready to drink beverages or one (1) or more of the following broad eligible and ineligible container groups (Section 3.1):
  - Carbonated and non-carbonated soft drinks
    - Including energy and sports drinks, cola, and ready to drink cordials
  - Fruit and vegetable juice
    - Including coconut juice and fruit juice
  - Alcoholic beverages
    - Including, beer, stout, ale, wine, cider and spirits
  - Carbonated and mineral water
    - Including sparkling and still water
  - Milk products
    - Including milk and drinkable yoghurts (e.g., fermented dairy products)
- Ineligible containers typically include those single-use ready to drink beverage containers greater than the respective scheme eligible container volume and specific conditions of acceptance (Section 3.1);
- Alongside single-use containers and inclusion in container return schemes, several countries also include refillable containers under either a voluntary or compulsory refillable deposit requirement (Section 3);
- Refillables can be either integrated and/or complimentary to a scheme, and may share collection infrastructure, such as, a container return facility (e.g., manual collection depot, Reverse Vending Machine accepting both (Section 3.1) single-use and refillable containers). Noting that most eligible containers included in global schemes include containers up to 5L with some schemes accepting containers up to 20L (Section 3.2);
- Across the range of international container return schemes, specific conditions of acceptance (e.g., size, type, material) are implemented via legislation to manage the containers eligible as part of the respective scheme (Section 3.3);
- Where global container return schemes encounter cross-boundary issues, the application of barcodes and/or other unique scheme labels has been implemented to reduce these cross-boundary issues (Section 3.3);
- Barcodes as well as the specific scheme refund marking provides a means of identifying and verifying eligible containers whilst also providing a means to, for example, minimise fraud and verify data (Section 3.3);
- Transition period requirements (e.g., eligible container labelling) are commonly put in place to assist producers, manufacturers and retailers to become compliant with scheme requirements (Section 3.3);
- Glass single-use beverage containers including wine bottles, beer bottles and soft-drink bottles are commonly included across a range of global schemes (Section 3.4);
- The inclusion of wine and spirit containers across the international container return schemes is varied with many schemes excluding wine or spirits contained in glass containers but including wine and spirits contained in other material types such as cardboard casks, plastic sachets, foil pouches or aluminium cans (Section 3.4);
- The current New Zealand voluntary glass product stewardship scheme including the geographical service coverage across Aotearoa New Zealand and overall cost of service, and recovery;

- The Cost Benefit Analysis undertaken for this project (with and without a range of material types including, for example, glass containers);
- The primary focus of the NZ CRS design process is single-use beverage containers, regardless of material type; and
- Eligible containers to have specific conditions of acceptance (including a barcode, QR code, or other form of unique identification).

there appears to be no basis at this stage to exclude any single-use beverage containers from the Aotearoa New Zealand scheme.

Whilst some of the end materials appear to struggle to find beneficial end-uses, just because something is not recyclable, is not a reason to exclude it from the scheme as that would commercially advantage these types of materials and products over products that can be more effectively recycled. Currently, a range of single-use beverage containers do not have a sustainable end-market solution (e.g., liquid paperboard) and/or are currently being disposed of to ruapara - landfill. As discussed in earlier sections, the recovery, beneficial use and associated cost of achieving ōhanga āmiomio - circular economy for different materials should be put back to the producer who would then incorporate this into the cost of the product(s). As such, the NZ CRS Project Team has consulted with the Scheme Design Working Group (SDWG) and other stakeholders (including central government departments) during the NZ CRS co-design process regarding the inclusion of an Advanced Material Recycling Fee (AMRF). The AMRF fee recognises that not all container packaging materials are equal with some more recyclable and valuable than others. In practice this means that materials that are difficult to recycle or problematic such as liquid paperboard may need to incur additional cost to see them successfully recycled in keeping with the outcomes of the NZ CRS design while other materials may receive a net income such as aluminium. Approaching this in an open and transparent way will ensure container material choices by beverage producers are recognised and reflects any net cost or revenue that is expected to ultimately be passed on to the customer. Also, in keeping with the outcomes of the NZ CRS design, the non-financial impacts associated with container material choice must be factored in or at the very least provided for to help shape the direction and choice of container material in the future. The AMRF provides the mechanism to achieve this (refer to Section 11 for further discussion)The NZ CRS Managing Agency will be responsible for the timing of when materials will be included in the NZ CRS, including the associated value of the AMRF for each material or product type.

It is also noted that other global schemes are, and have been, considering the expansion of the respective container return scheme to include other containers such as kitchen and laundry products. Acknowledging the focus of the NZ CRS design is to include single-use beverage containers, the design has not precluded these types of containers from being included in the scheme in the future.

### 3.7 Summary of Design Feedback Received

The following table provides a high-level summary of the feedback received from the Scheme Design Working Group (SDWG) members after reviewing the section information. As many suggestions as possible have been incorporated but the NZ CRS Project Team acknowledge that the wide range of views expressed meant not every edit could be accepted. The NZ CRS Project Team is grateful for those who have provided feedback and where possible these have been used to provide further clarity and context throughout this section, to inform the key components to be included in the NZ CRS design (Section 3.8) and to identify areas requiring further assessment during the NZ CRS implementation stage (Section 17).

Scope of Container Feedback – High-Level Summary	
<b>Areas for further Investigation</b>	
Additional consideration of relevant legislation in the definition of products (see Section 13 and Section 17 for further discussion).	A review of modern code systems and QR codes to manage fraud and provide scheme information to consumers (see Section 17 for further discussion).
Toxicology and ecotoxicology of labels, scheme IDs and recycled materials, especially for high fat beverages, and how recycled content can be reused considering these impacts (see Section 17 for further discussion).	Incentivises for producers to use refillables, including the use of economic and policy levers (see Section 13 and Section 17 for further discussion).
<b>Opposing Views</b>	
<b>Barcodes:</b> <ul style="list-style-type: none"> <li>Members in support state that barcodes are easy to use, effectively manage fraud, support the use of technology and facilitate unmanned facilities.</li> <li>Members against state that they are expensive to manage because many are international and that there are still associated fraud risks.</li> </ul>	<b>Container sizes:</b> <ul style="list-style-type: none"> <li>Sizes should be chosen based on material opportunities rather than technology limitations and that volume of containers should be considered.</li> <li>Sizes should be aligned with Australia for ease of trade and minimisation of arbitrage.</li> </ul>
<b>All glass to be included:</b> <ul style="list-style-type: none"> <li>Members in support note that it will help remove glass from kerbside, reduce carbon footprint, retain the value of glass and place responsibility on producers and consumers.</li> <li>Members against would like a cost benefit analysis comparing glass in the NZ CRS to the existing stewardship scheme, and some state that glass is well managed under the existing scheme.</li> </ul>	<b>All materials to be included:</b> <ul style="list-style-type: none"> <li>Members in support state that this ensures that producers do not change product materials to avoid being in the scheme.</li> <li>Members against believe that challenging materials like pouches should not be included as do not have end markets.</li> </ul>
<b>All single-use beverage containers to be included:</b> <ul style="list-style-type: none"> <li>Some members state that fermented yoghurts should be excluded.</li> <li>Others state that wine should be excluded to align with Australia, that wine is a small contributor to litter, and that further modelling is needed for wine to be included in the NZ CRS.</li> <li>Other members state that wine is to be</li> </ul>	<b>Refillables to be included:</b> <ul style="list-style-type: none"> <li>Members in support state the environmental benefits and the creation of producer responsibility.</li> <li>Members against believe that refillables should be addressed in a separate project, that there is insufficient evidence for the Managing Agency to promote refillables, and that this will have a negative impact on the</li> </ul>

<b>Scope of Container Feedback – High-Level Summary</b>	
introduced in the Australian schemes.	Associated Bottlers Co. Ltd (ABC).
<p>Allowing for the future addition of non-beverages:</p> <ul style="list-style-type: none"> <li>Members in support state that this supports a circular economy and would like the trigger point for future addition to be identified.</li> <li>Members against state that there is insufficient information on why other schemes exclude non-beverages and that there would need to be consideration of complexities such as contamination.</li> </ul>	
<b>Do not Support the Following</b>	
The use of a security logo or security ink.	
<b>Support the Following</b>	
Collection Point Operators to have discretion to reject containers.	Conditions of acceptance to be simple to understand for consumers.
Eligible containers to carry the deposit mark and be registered.	At manned sites, containers do not need to be identified by a scheme logo and barcode but are whole and reasonably able to be confirmed as eligible.
The ABC refillable bottle programme to remain and work alongside the NZ CRS.	Bi-lingual marketing and labelling to have Te Reo Māori and Māori imagery.
Any recycling fees to be less for refillables.	A clear definition of ineligible containers to avoid problematic packaging types entering the market and minimise fraud risk.
<b>Additional Design Considerations</b>	
Disincentives to ensure producers change container materials with no end markets, such as prohibiting the material to be sold and charging a disposal landfill fee based on material type (See Section 11 for further discussion).	Containers to be granted an exemption if the producers can demonstrate a functioning returnable/refillable solution (see Section 17 for further discussion).
Exported containers to be fully excluded rather than included by default and then to be exempted on application (see Section 17 for further discussion).	Consideration for compostable materials that contaminate recyclable materials (see Section 17 for further discussion).



## 3.8 Component(s) to be Included in the New Zealand Container Return Scheme Design

Taking the above key findings into account, including feedback from stakeholders involved in the NZ CRS design, the Project Team are of the view that all single-use beverage containers as provided below will be included in the NZ CRS and that other containers (including kitchen and bathroom, laundry, garage and garden) could be included in the future (e.g., within the bespoke NZ CRS legislative instrument).

### Eligible containers

- All single-use beverage containers (e.g., dairy, carbonated and non-carbonated soft drinks, fruit juices, alcohol and non-alcohol) to be included in the NZ CRS design;
  - The benefit of this approach is ensuring consumers have clarity in understanding what containers are included in the NZ CRS thereby reducing potential confusion and/or ambiguity regarding what containers are included in the NZ CRS.
- Eligible containers to include the following in all material types (e.g., PET, HDPE, LPB, glass) and container types (e.g., sachets, pouches, bottles):
  - Carbonated and non-carbonated soft drinks (including energy and sports drinks, cola and ready to drink cordials).
  - Fruit and vegetable juice (including coconut juice and fruit juice).
  - Alcoholic beverages (including beer, stout, ale, wine, cider and spirits).
  - Carbonated and mineral water (including sparkling and still water).
  - Dairy products (including white and flavoured milk and drinkable yoghurts (e.g., fermented dairy products)).
  - Include all single-use beverage containers to reduce consumer confusion.
  - The NZ CRS design to include all single-use beverage containers less than or equal to 4L in volume.
    - The benefit of this approach is as described above to provide consumers with a clear understanding of what containers are included in the NZ CRS thereby reducing potential confusion and/or ambiguity regarding what containers are included in the NZ CRS. Additionally, including all material and container types in the NZ CRS ensure all beverage producer participants are treated equitably regarding container material and type.
  - Sachets and pouches shall be introduced into the scheme within two (2) years of the scheme commencing.
    - The benefit of this approach is that this allows the NZ CRS to initially focus on the mainstream containers whereas sachets and pouches represent a minor volume only and will require a more specialised approach.
- All eligible scheme containers to be registered with the scheme Managing Agency. It will be deemed illegal for any eligible scheme containers not to be registered with the scheme and in such cases, penalties will apply and be determined by the court system (e.g., imprisonment and/or monetary fine). Criminal offences will be the responsibility of the New Zealand Police with commercial offences the responsibility of the particular Government authority (e.g., Inland Revenue Department).
  - The benefit of this approach is that all eligible scheme containers sold in Aotearoa New Zealand will be required to be registered with the scheme Managing Agency, be part of and contribute financially to the NZ CRS.

## Ineligible containers

Ineligible containers include:

- Non single-use containers (including for example, bathroom, kitchen, laundry, garage, garden shed products), however, this does not preclude these types of containers from being included in the scheme in the future.
  - The reason for this approach is to initially focus the NZ CRS on single-use beverage containers which compliments other global schemes, while acknowledging that as the NZ CRS develops and matures, other container types can be included. The added benefit of this approach is to support Aotearoa New Zealand’s transition from a linear economy to ōhanga āmiomio – circular economy.
- The container return facility to have the discretion to reject containers based on material identification and in accordance with the requirements of the Managing Agency and NZ CRS legislative instrument, including but not limited to:
  - Broken containers.
  - Damaged but intact (e.g., a container that is returned to a container return facility that is so damaged or in such a condition that the scheme label and/or barcode and/or QR code and/or other scheme identification label cannot be verified or recognised).
  - Label missing but identifiable as an eligible container.
  - Contaminated with substances that make the container a health risk or unsuitable for recycling.
  - There are reasonable grounds that the container was not sold in Aotearoa New Zealand.
  - There are reasonable grounds that the container was part of a bale.
    - The benefit of this approach is to ensure that container return facilities provide the NZ CRS with the first line of contamination and fraud assessment supporting the collection and verification of material that meets the specific scheme conditions of acceptance.
- Suppliers that intend to sell (export) eligible containers outside of New Zealand will be eligible for a refund of the scheme deposit with the Managing Agency establishing and implementing appropriate mechanisms to accurately and transparently recorded export exemptions for audit and scheme compliance.
  - The reason why this is good for the NZ CRS is that those beverage containers to be exported from New Zealand will not be purchased and consumed by New Zealand consumers, and will not contribute to New Zealand’s recovered material volumes.

## Container conditions of acceptance

- All eligible containers to be labelled which may include a unique scheme label indicating the deposit amount and, for example, a barcode, and/or QR code, and/or security logo.
  - The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
- The unique scheme label indicating the deposit amount and, for example, a barcode, and/or QR code, and/or security logo must be legible to be accepted for a refund.
  - The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
- Eligible containers to be empty of contents and must not be contaminated with substances that make the container a health risk or unsuitable for recycling.
  - The benefit of this approach is to support the safety of those individuals directly handling the eligible containers and ensuring the collected scheme containers are of high quality to support recyclability of the material.

- Eligible containers must be whole (e.g., an eligible container that is not missing anything other than what a consumer may need to remove in order to consume the product), intact and not be broken (e.g., broken glass bottle), however it may be crushed depending on the preferences of the container return facility and requirements as determined by the Managing Agency.
  - The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
- Container lids to be removed by the consumer at the point of return.
  - The reason why this is beneficial to the NZ CRS is to ensure clean uncontaminated streams of material are received for processing. The lids are to be collected by the container return facility with the Managing Agency supporting recycling of lids via identified pathways.
- Establishment of appropriate import and export control measures to manage scheme fraud and general material flow within the economic system.
  - The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud. Additionally, it is acknowledged that global container return schemes commonly provide the beverage producer exemptions for exported products that are sold offshore and therefore will not be part of the respective container return scheme.
- At this stage of the NZ CRS design process and acknowledging SDWG feedback, refillables will not be included as an eligible scheme container and therefore will not be part of the NZ CRS design. However, the NZ CRS Managing Agency will promote and encourage the development of the refillables market (NOTE: further investigatory work regarding the Aotearoa New Zealand refillable market has been recommended in Section 17 to better understand how the NZ CRS can facilitate the refillable market) through options including, but not be limited to:
  1. Funding and promoting the benefit and awareness of refillables as a preferred choice to New Zealanders.
  2. Working closely with existing and future New Zealand refillable schemes to identify and remove barriers to their growth, irrespective of whether existing or future refillable schemes choose to be included within a NZ CRS or not. This approach recognises and provides for individual companies to manage and promote their own unique refillable containers and where companies may wish to share a universal bottle.
  3. Further to item 2, investment in, or funding of, infrastructure by addressing and removing barriers such as the return, re-washing and refilling of bottles.
  4. Ensuring that the method of return by customers is convenient, accessible and where appropriate and practicable is compatible with existing NZ CRS container return facilities.
  5. Establishment of NZ CRS container return facilities that, where practicable, can accept, sort and store for transportation both eligible single-use beverage containers and reusable beverage containers.
  6. Support and facilitate the uptake of reusables through the integration of strategic directives embedded within the NZ CRS scheme performance indicators.
  7. Securing the funding to achieve the above from the scheme fee.



## SECTION 4: CONTAINER RETURN FACILITIES

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## Section 4 Container Return Facilities

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Of the global schemes where information was available, the types of container return facilities and container counting systems can be broadly categorised into manual or automated methodologies as follows, whilst acknowledging that variations of each may occur:

### 1. Manual Container Return

- Manual return depot (including where available a bag-drop option)
  - A manual collection<sup>117</sup> depot may consist of drive through lanes or over-the-counter depots which use manual or electronic scanners to count containers and provide refunds (e.g., cash, electronic funds transfer, donation, voucher). Some manual collection depots may also offer a quick 'bag-drop' service to customers, including mobile and/or pop-up facilities. Manual return depots are further discussed in Section 4.1.1.

### 2. Automated Container Return

- Reverse Vending Machines (RVM) (including RVM depots, supermarket carpark RVMs)
  - An RVM means<sup>118</sup> an automated device that accepts empty containers using a laser scanner, microprocessor, or other technology to accurately recognize the Universal Product Code (UPC) on eligible containers and provides a refund (e.g., voucher, donation, electronic funds transfer). RVMs are further discussed in Section 4.1.2.1.
- Return-to-Retail
  - The return-to-retail<sup>119,120</sup> collection option in a container return scheme typically requires, by legislation, retailers selling eligible containers to also collect the containers from consumers for recycling (e.g., reverse vending machines integrated into retail stores). Return-to-retail is further discussed in Section 4.1.2.2.

As illustrated in the below schematic, a container return facility is a facility where consumers can return eligible scheme containers for the appropriate deposit refund. The container return facility may include a range of facility types, for example, manual return depots, bag drop, mobile or pop-up facilities, Reverse Vending Machines, return-to-retail to provide consumers with choice and convenience.

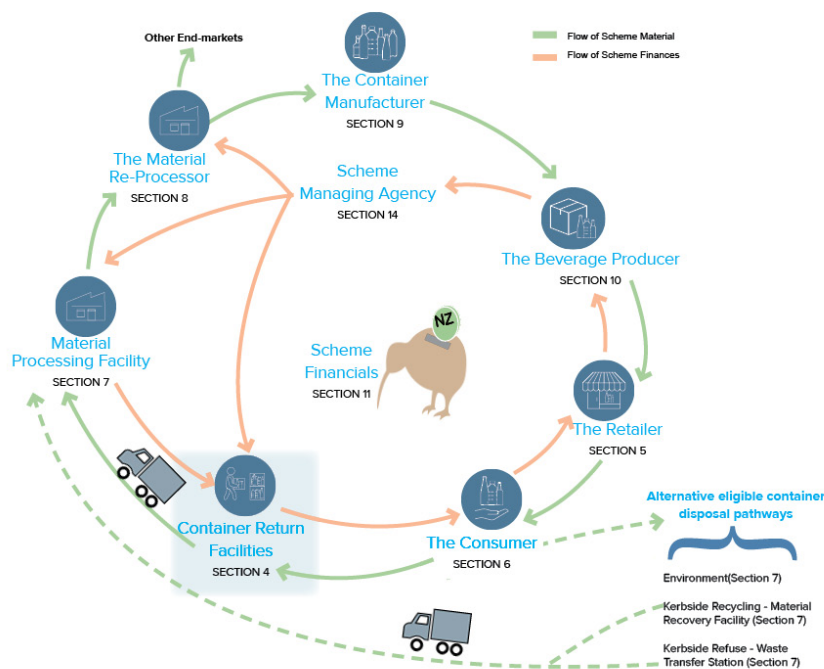
<sup>117</sup> <https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/waste/container-deposit/design-guide-for-cds.pdf>

<https://www.containersforchange.com.au/qld/where-can-i-return>

<sup>118</sup> <https://www.tomra.com/en/collection/reverse-vending/reverse-vending-systems>

<sup>119</sup> <https://www.tomra.com/en/collection/reverse-vending/case-studies/return-to-retail-model>

<sup>120</sup> <https://grazintiverta.lt/en/for-business/for-sellers/>



Broadly, Table 8 shows a return-to-retail model is commonly used within the European market with countries such as Finland, Germany, Lithuania and The Netherlands providing schemes that are predominantly automated and with reported return rates of between 92% (Finland and Lithuania) and 98% (Germany). Similarly, the United States of America and Canada provide consumers with a return-to-retail and manual return depot model with reported return rates of between 50% and 92% (United States of America) and 62% and 88% (Canada). Australia, in comparison, predominantly provides consumers with a depot model supplemented with RVMs located at a range of locations with reported return rates of between 48% and 80%. However, it should be noted that variations of each may occur in any scheme (e.g., RVMs may include stand-alone facilities and/or RVM depots). For example, in New South Wales, while not a return-to-retail model as seen in Europe, RVM machines are commonly located within supermarket carpark which have the option to issue the consumer a refund voucher that can be redeemed at the particular supermarket for either a cash refund or be used to contribute towards the shopping bill. Additionally, the results of a consumer survey undertaken by the Western Australia Government to inform the design of the Western Australian container return scheme reported that most respondents (3,138) noted preference to receive a cash refund (62.2%) with others noting to include the option of having the refund transferred to a charity (15.1%) or direct to their bank account (10.7%). Other common methods of refund payments noted by the respondents included, online payment systems (e.g., PayPal, Apple Pay or Android Pay), cryptocurrent (e.g., bitcoin), credit card/other card/utility (e.g., gas, water, rates, electricity, taxes), fuel or beverage discount voucher, school and children funds<sup>121</sup>. As such, Table 8 below does not include return-to-retail as an option for New South Wales, but rather includes this unique attribute under a Reverse Vending Machine (RVM) container collection methodology. Further, an important consideration here is also noting the maturity (i.e., years of operation) of the respective container return schemes as well as several other factors (e.g., location of return facilities and consumer understanding of the scheme) that have an influence on container return rates. Where a charity organisation provided a container return service, this was commonly provided under a manual return location or as a bespoke collection (e.g., containers collected from community residents).

<sup>121</sup> Western Australia Container Deposit Scheme Consultation Summary, 2018 Government of Western Australia Department of Water and Environmental Regulation



Further information on the container return methodology and locations of container return facilities are discussed in Section 4.1 and Section 4.2.

**Table 8: Key summarised global container collection methodologies including reported return rates<sup>122</sup>**

Region/Country	State/Country	Container Collection Methodology			Container Return Rate (%) approximate
		Return-to-Retail <sup>123</sup>	Manual Return Depot <sup>124</sup>	Reverse Vending Machine (RVM) <sup>125</sup>	
Australia	Northern Territory		•	•	48
	Western Australia		•	•	No data <sup>126</sup>
	South Australia		•		76.9 <sup>127</sup>
	New South Wales		•	•	71 <sup>128</sup> (53 <sup>129</sup> )
	Queensland		•	•	54 <sup>130</sup> (50 <sup>131</sup> )
Europe	Croatia	•			87
	Denmark	•			90
	Estonia	•			83
	Finland	•			92
	Germany	•			98
	Iceland		•		90
	Lithuania	•			92
	The Netherlands	•			95
	Norway	•			95
	Sweden	•			85
United States of	California	•	•		77

<sup>122</sup> <https://reloopplatform.eu/wp-content/uploads/2018/05/BOOK-Deposit-Global-27-APR2018.pdf>  
<http://www.bottlebill.org/index.php/current-and-proposed-laws/australia/new-south-wales>

<sup>123</sup> The return-to-retail option in a container return scheme typically requires, by legislation, retailers selling eligible containers to also collect the containers from consumers for recycling (e.g., reverse vending machines integrated into retail stores).

<sup>124</sup> A manual collection depot may consist of drive through lanes or over-the-counter depots which use manual or electronic scanners to count containers and provide refunds (e.g., cash, electronic funds transfer, donation, voucher). Some manual collection depots may also offer a quick 'bag-drop' service to customers.

<sup>125</sup> A Reverse Vending Machine is an automated device that accepts empty containers using a laser scanner, microprocessor, or other technology to accurately recognize the Universal Product Code (UPC) on eligible containers and provides a refund (e.g., voucher, donation, electronic funds transfer).

<sup>126</sup> The Western Australian scheme has not yet begun therefore no data is yet available.

<sup>127</sup> For the period February 2019 – March 2020

<sup>128</sup> For the period February 2019 – March 2020

<sup>129</sup> First 12-months of operation (01 December 2017 to 01 December 2018), Queensland Productivity Commission Report 2020

<sup>130</sup> For the period February 2019 – March 2020

<sup>131</sup> First 12-months of operation (01 November 2018 to 31 October 2019), Queensland Productivity Commission Report 2020

Region/Country	State/Country	Container Collection Methodology			Container Return Rate (%) approximate
		Return-to-Retail <sup>123</sup>	Manual Return Depot <sup>124</sup>	Reverse Vending Machine (RVM) <sup>125</sup>	
America	Connecticut	●	●		51
	Hawaii		●		65
	Iowa	●	●		71
	Maine	●	●		84
	Massachusetts	●	●		57
	Michigan	●			92
	New York	●	●	●	66
	Oregon	●	●		75
	Vermont	●	●		75
Canada	Alberta		●		86
	British Columbia	●	●		82
	Manitoba	●			79
	Newfoundland and Labrador		●		62
	New Brunswick		●		73
	Northwest Territories		●		88
	Nova Scotia		●		81
	Ontario	●			87
	Prince Edward Island		●		80
	Quebec	●			71
	Saskatchewan		●		82
Yukon		●		82	

## 4.1 Container Return and Counting Methodology

Of the global schemes where information was available, the types of container return and counting methodologies can be broadly categorised into manual (Section 4.1.1) or automated (Section 4.1.2) systems. A summary of the relevant facilities included within the manual and automated systems are included in the below sub-sections with case studies presented where appropriate.

### 4.1.1 Manual Container Return Facilities

The following sections provide a summary of the types of manual container return facilities, including case studies where available.

#### 4.1.1.1 Manual Collection Depots

Manual collection depots are generally defined as locations which provide customers with a service whereby their empty eligible containers are counted immediately by onsite staff (i.e., containers are counted either using a manual method or using an electronic scanner) and provide refunds in cash or via

an electronic funds transfer<sup>132,133</sup>. Two (2) case studies are presented below discussing the use of manual collection depots.

#### 4.1.1.1.1 South Australia Case Study

In South Australia, the container return scheme is predominantly based on manual collection depots which collect beverage containers (which have the appropriate refund markings) sold in South Australia and then pay refunds (cash or charity donation) to customers. In 2018–19, the South Australian Environment Protection Authority (EPA) reported over 612 million containers were returned to collection depots for recycling<sup>134</sup>. Additionally, the South Australian EPA notes there is no obligation for customers to sort containers before arriving at a collection depot, however the EPA note that sorting containers into the various material types (e.g., aluminium, plastic, glass) may save the onsite depot staff time as they then receive containers by type rather than as a commingled amount.

As reported by the South Australian EPA, there are 132 collection depots across metropolitan Adelaide and across South Australia's regional areas with the depot industry taking pride in providing an accessible community recycling service and producing high-quality recyclable material for further processing<sup>135,136</sup>.

In addition to depots collecting eligible containers, many collection depots also accept other recyclable materials, such as ineligible containers, paper and cardboard, scrap steel and household items (e.g., refrigerators, ovens) which are then recycled. Additionally, the South Australian EPA notes that while there is no legal requirement to remove lids from containers, the suggestion is for customers to remove lids before arriving at the depot as container lids are generally made from a different material which has the potential to cause problems with transport and storage. These lids can then be brought to the depot where depot operators can recycle the items.

The condition of an eligible container is important as the depot operator is under no obligation to accept containers that do not have a refund statement clearly visible (e.g., flattened cans). It is therefore in the best interest of a customer to maintain the quality and condition of the eligible container to maximise the likelihood of acceptance at the depot. Depot operators do though have the opportunity to refuse to accept a person(s) (i.e., customer's) containers where containers are:

- Unclean or contaminated;
- The refund marking is illegible or not visible;
- The depot operators believe that the containers were not sold in South Australia and may have been purchased interstate; or
- If a person refuses to complete a declaration when asked to do so by the depot operator.

In instances where a depot believes a customer is presenting containers for a refund that were not purchased in South Australia, the operator may request the person to complete a written declaration, and where a customer presents 3,000 or more containers within an 48-hour period, a depot operator is required to request the customer to complete a written declaration for the purpose of claiming a refund. In addition, a maximum penalty of AUD\$30,000 can apply to any person(s) who seek refunds on beverage containers sold outside of South Australia<sup>137</sup>.

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*Manual collection depots are generally defined as locations which provide customers with a service whereby their empty eligible containers are counted immediately by onsite staff (i.e., containers are counted either using a manual method or using an electronic scanner) and provide refunds in cash or via an electronic funds transfer*

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<sup>132</sup> Environmental Guidelines for Collection Points, 2000. South Australia EPA

<sup>133</sup> <https://www.containersforchange.com.au/qld/where-can-i-return>

<sup>134</sup> [https://www.epa.sa.gov.au/environmental\\_info/container\\_deposit](https://www.epa.sa.gov.au/environmental_info/container_deposit)

<sup>135</sup> [https://www.epa.sa.gov.au/environmental\\_info/container\\_deposit](https://www.epa.sa.gov.au/environmental_info/container_deposit)

<sup>136</sup> Environmental Guidelines for Collection Points, 2000. South Australia EPA

<sup>137</sup> [https://www.epa.sa.gov.au/environmental\\_info/container\\_deposit/faqs](https://www.epa.sa.gov.au/environmental_info/container_deposit/faqs)

No further information was available at the time of writing detailing how the written declaration was processed once submitted by the customer.

#### 4.1.1.1.2 Alberta, Canada Case Study

Alberta, Canada has more than 200 manual depot locations, which may also include an automated sorting system that makes the counting process more efficient<sup>138</sup>. As in South Australia, customers are not required to pre-sort the containers before arriving at the depot, although by doing so it may save time at the depot. As reported by the Alberta Beverage Container Management Board, over 2 billion containers were collected by the collection depots with high customer satisfaction reported particularly noting the fast and efficient service offered and friendly depot staff<sup>139</sup>.

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*Over-the-counter locations operate small businesses with varying operating hours and with a similar small sales area footprint*

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#### 4.1.1.2 Over-the-Counter Return Locations

In New South Wales, a range of container return locations are provided to customers, including an option to return eligible containers to registered local business such as news agencies or corner stores (i.e., over-the-counter). Over-the-counter locations are separate to return-to-retail which is discussed further in Section 4.1.2.2. Typically, over-the-counter locations operate small businesses with varying operating hours and with a similar small sales area footprint. Therefore, the practicalities of accepting eligible containers means most locations will accept small quantities (usually less than 100 containers and pre-sorted by the customer) for a cash refund<sup>140</sup>. The store assistant will manually count the eligible containers and issue the customer with a refund; however, this process can present challenges to both the store assistant and customer. For example, it is acknowledged that some New South Wales over-the-counter stores are managed by a single store assistant whom must also count eligible containers, record and issue the refund whilst also managing other customer sales. In addition, the store must also have enough space to store collected containers for collection. In some cases, the store will have an area at the rear of the store where containers are counted which has the potential to create security issues for both the store and customer.

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*A container bag-drop is a return option whereby a customer can conveniently drop-off collected and bagged eligible containers for counting with a refund issued via electronic funds transfer.*

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As reported by Return and Earn New South Wales, over-the-counter locations are responsible for ensuring that customer presented containers are eligible, the correct type, are uncrushed and unbroken, and have the original label attached. It is also the responsibility of the store to issue the appropriate cash refund per eligible container to the customer<sup>141</sup>. Further anecdotal evidence collected during field trips by some of the NZ CRS Project Team in December 2019 indicated that store owners considered storage of the eligible containers difficult particularly where large volumes of eligible containers were returned.

#### 4.1.1.3 Container Bag-Drop

A container bag-drop is a return option offered in Queensland, whereby a customer can conveniently drop off collected and bagged eligible containers for counting with a refund issued via electronic funds transfer. In order to use a bag-drop service, a customer is requested to use a multi-use plastic bag, or a bag provided by an operator (some operators provide bags as promotional material to build loyalty) to collect eligible containers. In order to track the containers against the respective customer, a unique tag

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<sup>138</sup> <https://albertadepot.ca/>

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[https://www.bcmb.ab.ca/uploads/source/Annual\\_Reports/2019.06.05.BCMB.2018.Annual.Report.Web.Version.pdf](https://www.bcmb.ab.ca/uploads/source/Annual_Reports/2019.06.05.BCMB.2018.Annual.Report.Web.Version.pdf)

<sup>140</sup> <https://returnandearn.org.au/partners/return-point-partners/>

<sup>141</sup> <https://returnandearn.org.au/partners/return-point-partners/>

(issued from the bag-drop location) displaying the customers scheme ID<sup>142</sup> and transaction ID must be attached to the bag before it is dropped off.

#### 4.1.1.3.1 Mobile or Pop-Up Return Location

A mobile and/or pop-up container return location is similar to that of a container bag-drop however, as the name suggests, the locations are mobile and in Australia, mobile return locations can be 20ft containers in size (approximately the footprint of 1-carpark) (e.g., Envirobank mobile return location<sup>143</sup>) (Figure 15).



**Figure 15: Image of an Envirobank mobile bag-drop facility**

In Queensland, Container for Exchange offers mobile container refund points that provide a scheduled service, allowing customers, community groups and charities to return their containers for a refund either in cash or to the scheme ID provided. As reported by Containers for Exchange, these points are operated by over-the-counter depots or drop-offs; usually using a trailer with a cage parked at a regional location such as a community store or supermarket, for a few hours on a Saturday morning (for example)<sup>144</sup>.

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*A mobile and/or pop-up container return location is similar to that of a container bag-drop however, as the name suggests, the locations are mobile*

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Mobile and/or pop-up container return locations (e.g., one-off events or functions, school events) are offered by organisations such as Envirobank Queensland in states including Northern Territory where remote communities are not conveniently serviced by permanent return locations<sup>145</sup>. As discussed for bag-drop options (Section 4.1.1.3), customers drop off eligible containers using specific Envirobank collection bags, attach a unique identification tag and register their details on the Envirobank website (i.e., Crunch account)<sup>146</sup>. Once the eligible containers are counted, Envirobank issues the refund directly to the customers 'Crunch' account for the customer to use as they wish (e.g., withdraw cash via Envirobank partner organisations, transfer 'Crunch' credits to Velocity frequent flyer, or redeem credits through gift cards including Coles and JB HiFi stores)<sup>147</sup>. No further information was available at the time of writing to indicate Envirobanks charge (if any) for the transfer of 'Crunch' credits to the above listed options.

<sup>142</sup> A scheme ID is a 9-character alphanumeric code that allows Container Exchange to process payments electronically.

<sup>143</sup> <https://envirobank.com.au/>

<sup>144</sup> <https://www.containersforchange.com.au/qld/>

<sup>145</sup> <https://ntepa.nt.gov.au/container-deposits/collection-depots>

<sup>146</sup> <https://envirobank.com.au/>

<sup>147</sup> <https://envirobank.com.au/bottle-and-can-recycling-queensland/>

## 4.1.2 Automated Container Return Facilities

The following sections provide a summary of the types of automated container return facilities, including case studies where available.

### 4.1.2.1 Reverse Vending Machine

In a normal vending machine, you insert money to receive a beverage, however in a Reverse Vending Machine (RVM) you place the empty container into the machine to receive the container refund.

An RVM is an automated machine that utilises advanced technology to identify, sort, collect and process used beverage containers<sup>148,149</sup>. RVMs are in use throughout the range of international container schemes including across Europe, Australia and the United States of America where customers are provided with a convenient way to return eligible containers and receive their refund. While customer convenience has been a key consideration in the use of RVMs throughout the international schemes, RVMs also provide the following benefits when employed in container return schemes<sup>150,151</sup>.

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*An RVM is an automated machine that utilises advanced technology to identify, sort, collect and process used beverage containers where customers are provided with a convenient way to return eligible containers and receive their refund*

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- Engagement with customers as it makes recycling convenient as it is fast and clean, and this motivates repeated use in combination with the instant reward;
- A secure means to collect and store containers as many RVMs are either inbuilt or standalone machines, with secure storage areas at the rear where containers are automatically sorted into the selected materials (e.g., glass, plastic, metal);
- A range of solutions to cater for small to medium sized retail stores that require a space-efficient recycling solution with good storage capacity;
- Functions to sort, store and compress materials for collection and transportation; and
- Provide marketing opportunities and customer engagement for retailers housing an RVM.

In Australia, RVMs are used in the already operational states of New South Wales (80% of the network volume is received via RVMs<sup>152</sup>), Queensland, Northern Territory and will be implemented in Western Australia once the scheme is in operation (see Table 8 for further information). South Australia at present does not offer RVMs as a return location, but the current review process is investigating the option of additional return locations which may include RVMs<sup>153</sup>.

Compared with mobile container return locations, RVMs can provide a range of sizes and prices from a 1m<sup>2</sup> footprint up to, for example, a 20ft container as is used across New South Wales<sup>154</sup>. The size of the RVM though is directly related to capacity which is directly influenced by the frequency of container collection. As is reported by New south Wales, an RVM is best for returning smaller quantities of containers (up to 500) in any one (1) transaction<sup>155</sup>.

In New South Wales, RVMs are known to be located in the carparks of supermarkets (e.g., Woolworths) and may use 2-side by side carpark spaces if a dual RVM (i.e., separate RVMs for glass and combined

<sup>148</sup> <http://www.reversevending.co.uk/>

<sup>149</sup> <https://www.tomra.com/en/collection/reverse-vending>

<sup>150</sup> <http://www.reversevending.co.uk/>

<sup>151</sup> <https://www.tomra.com/en/collection/reverse-vending>

<sup>152</sup> [https://d3n8a8pro7vhm.cloudfront.net/boomerangalliance/pages/3728/attachments/original/1543818942/Boomerang\\_Report\\_dec\\_2018-final2\\_small.pdf?1543818942](https://d3n8a8pro7vhm.cloudfront.net/boomerangalliance/pages/3728/attachments/original/1543818942/Boomerang_Report_dec_2018-final2_small.pdf?1543818942)

<sup>153</sup> Improving South Australia's Recycling Makes Cents Scoping Paper – Consultation Summary Report, 2019

<sup>154</sup> <https://www.tomra.com/en/collection/reverse-vending>

<sup>155</sup> <https://returnandearn.org.au/return-points/return-point-types/>

cans and plastic) are used, or alternatively located in light industrial areas. In addition, RVMs provide customers with a range of options to receive the container refund, including vouchers which can be redeemed at supermarkets for cash or a discount on their shopping bill, direct funds credit (e.g., PayPal) to a nominated bank account, or donation to a charity<sup>156</sup>.

The New South Wales Government<sup>157</sup>, design guidelines for the establishment of return locations set the minimum requirements to be met, including the following minimum construction design guidelines for RVM facilities under the New South Wales Container Deposit Scheme:

- RVMs can be situated in a wide range of environments, provided there is sufficient space;
- They are best installed in public spaces where pedestrians can access them for mainly depositing single eligible containers, including;
  - public transport facilities such as train stations, bus interchanges, ferry terminals and bus shelters.
  - educational establishments including Technical and Further Education (TAFEs) facilities, universities and schools.
  - parks and nature reserves, including picnic areas and barbecue areas.
  - retail premises such as supermarkets, shopping malls, wholesale retailers and retail parking lots.
  - major multi-storey parking lots adjacent to main pedestrian exits.
- RVMs must not be installed in environmentally sensitive areas.

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*RVMs commonly scan the containers' barcodes, materials or shapes, to identify the type of packaging and give the customer the appropriate refund amount. Once the eligible containers are accepted by the RVM, the machine sorts them into different types and storage units which are located at the rear of the machine*

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While there are many RVM options available internationally, RVMs commonly scan the containers' barcodes, materials or shapes, to identify the type of packaging and give the customer the appropriate refund amount. Once the eligible containers are accepted by the RVM, the machine sorts them into different types and storage units which are located at the rear of the machine (e.g., storage bins, wheelie bins). Depending on the scheme, an RVM can be manufactured to accept both refillable and single-use containers, with the refillable containers moved to a designated storage area in the machine with single-use containers crushed and stored in different bins<sup>158</sup>. Additionally, RVMs used in the Norwegian container return scheme accept both eligible and non-eligible containers (i.e., foreign beverage cans and bottles), however, the consumer does not receive a refund back when the non-eligible containers are returned into the RVM<sup>159</sup>. The ability of an RVM to accept non-eligible containers may present a benefit to consumers where there is confusion regarding container eligibility, however consideration needs to also be given to the potential misuse of an RVM rather than the consumer using alternative means of disposal (e.g., kerbside recycling service). Consumer education and scheme marketing is a key consideration in the design of a container return scheme and the influence this has on a consumer understanding and engagement (to be further discussed in Section 6).

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*Donation stations are machines that allow consumers to donate their refund to a charity or local community group*

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Further, the RVM machines used in New South Wales (i.e., TOMRA) require customers to retain the integrity and quality of the container by not crushing or removing the labels. This is due to the RVM scanners needing to identify the shape, label, refund label and barcode in order to register the container

<sup>156</sup> <https://www.tomra.com/en/collection/reverse-vending>

<sup>157</sup> <https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/waste/container-deposit/design-guide-for-cds.pdf>

<sup>158</sup> Refillable glass beverage container systems in the UK, WRAP Report, 2008

<sup>159</sup> <https://infinitum.no/english/deposit-facts-of-2013>

and ensure the appropriate refund is provided to the customer<sup>160</sup>. In Queensland, RVMs established by Envirobank scan the container barcode to determine its eligibility followed by sorting and crushing the container (depending on material type)<sup>161</sup>.

In addition, where RVMs have been implemented in container return schemes, this has often been accompanied by manual collection systems (see Section 4.1.1) which have been reported to provide a 'back-up' when the RVMs are not functioning or if the RVMs are not equipped to take the full range of eligible containers as required by the scheme<sup>162</sup>.

#### 4.1.2.1.1 Donation station

Donation stations are machines that allow consumers to only donate their refund to a charity or local community group<sup>163</sup>. The donation station does not enable the consumer to receive the refund in any other form (e.g., cash, electronic funds transfer or voucher) and so where consumers want this option, they are required to visit another type of return point. Donation stations have been set up in New South Wales with key locations reported to include:

- Some train stations;
- Service New South Wales offices;
- Martin Place; and
- Taronga Zoo.

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*An automated depot is similar in nature to a manual return location, with the difference being the incorporation of a mechanical scanner and counting system to provide fast and efficient processing of larger returns*

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Additionally, Queensland<sup>164</sup> offers consumers two (2) types of donation points: physical and virtual.

- Physical donations are run by community and sporting groups, charities, and not-for-profit organisations to raise funds; and
- Virtual donations allow any community group, school or sporting group, charity and not-for-profit to register with the scheme and receive a scheme ID. By receiving a scheme ID groups can share these details with customers, supporters and network base, without physically operating a container refund point themselves.

In Queensland, in order for a consumer to donate their refund they simply need to select the scheme ID at the return locations (e.g., over-the-counter depot, drop-off, RVM or mobile or pop-up site) to donate to, and the nominated group will receive the 10-cent refund.

#### 4.1.2.1.2 Automated Depots

An automated depot is similar in nature to a manual return location, with the difference being the incorporation of a mechanical scanner and counting system to provide fast and efficient processing of larger returns (e.g., greater than 500 eligible containers in New South Wales)<sup>165</sup>. Singulators operate in much the same way as an RVM (i.e., scanning and sorting of eligible containers) but with the key difference being they are operated by site staff rather than the public.

#### 4.1.2.2 Return-to-Retail

Across the European container return schemes, return-to-retail is the predominant method available for consumers to return eligible containers. This method of container return is used across nine (9) European countries (including Lithuania, Germany, Croatia and Estonia),

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*Across the European container return schemes, return-to-retail is the predominant method available for consumers to return eligible containers*

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<sup>160</sup> <https://www.mytomra.com.au/eligible-containers/>

<sup>161</sup> <https://envirobank.com.au/who-we-are/what-we-do/rvms/>

<sup>162</sup> Review of Packaging Deposits System for the UK, 2008.

<sup>163</sup> <https://returnandearn.org.au/>

<sup>164</sup> <https://www.containersforchange.com.au/qld/>

<sup>165</sup> <https://returnandearn.org.au/>



across the United States of America (including California and Maine) and Canada (including Quebec and Ontario). Of note, those container schemes employing a return-to-retail collection option for consumers, have been reported to achieve return rates of up to 98% (Germany) to 57% (Connecticut), with regions without retail involvement achieving return rates of 61% (Newfoundland and Labrador) to 90% (Iceland) and some markets as low as 48% (Northern Territory) (see Table 8 for further information)<sup>166</sup> which may be related to the location of these facilities being where consumers already visit. The results of a consumer survey undertaken by the Western Australia Government to inform the design of the Western Australian container return scheme reported that of the 3,256 people surveyed, approximately 97% supported a scheme with more than half (52.5%) of the respondents noting retail centres as the preferred location to return eligible containers<sup>167</sup>. However, it is important to note that scheme return rates are not only related to the method of eligible container collection available to the consumer. Other influencing factors such as population spread, public engagement, deposit value and scheme design also influence the return rate and are discussed in the following sections.

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*Return-to-retail legislation in a container return scheme typically requires stores to accept and collect all eligible containers from consumers for recycling*

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Return-to-retail legislation in a container return scheme typically requires stores to accept and collect all eligible containers from consumers for recycling. Depending on the design of a container return scheme, return-to-retail may apply only to larger supermarkets (i.e., those exceeding a specific floor area) or also include smaller stores (i.e., smaller convenience stores).

Return-to-retail collections have been implemented throughout Europe via a legislated requirement whereby retailers (also defined as distributors) exceeding a specified sales area must accept (i.e., take back) all eligible containers. This requirement occurs throughout Europe, including Germany where all retailers exceeding 200m<sup>2</sup> sales area must accept all eligible containers, with retailers with less than the obligated sales area required to accept only those eligible container brands put into circulation by that retailer. As an example, the Lithuanian return-to-retail model requires stores over 300m<sup>2</sup> to accept used containers, smaller stores can opt in, with all stores in rural areas required to accept used containers<sup>168,169</sup>. However, no literature was available at the time of writing discussing, for example, potential supply chain commercial tensions.

However, it is acknowledged that supermarkets may be presented with a range of challenges to accommodate container return solutions (e.g., RVMS) within the direct store footprint (e.g., potential for increased labour to keep the surrounding area clean and tidy), however no literature from a retailer's perspective was available at the time of writing that assessed these likely impacts.

Where a return-to-retail model is used in global container return schemes, it has commonly been implemented to improve consumer/customer efficiency, with retailers often providing a reverse vending machine (refer Section 4.1.2.1 for further information) either located inside the retailer (e.g., entrance to retailer as in Germany) or outside (e.g., carpark as in new South Wales). Additionally, retailers (e.g., supermarkets) are located close to residential areas and generally have a network of stores (including in remote communities) therefore providing consumers the convenience of returning eligible containers at the time of carrying out their shopping<sup>170</sup>. Further, the results of a consumer survey undertaken by the Western Australian Government to inform the design of the Western Australian container return scheme reported that most (42.6%) of the 3,247 respondents would travel

<sup>166</sup> <https://www.environmental-expert.com/articles/the-return-to-retail-collection-model-for-container-deposit-schemes-case-study-798020>

<sup>167</sup> Western Australia Container Deposit Scheme Consultation Summary, 2018 Government of Western Australia Department of Water and Environmental Regulation

<sup>168</sup> <https://www.tomra.com/en/collection/reverse-vending/case-studies/return-to-retail-model>

<sup>169</sup> <https://grazintiverta.lt/en/for-business/for-sellers/>

<sup>170</sup> <https://www.environmental-expert.com/articles/the-return-to-retail-collection-model-for-container-deposit-schemes-case-study-798020>

up to 5km for shopping, sports, etc with 33% travelling between 5km and 10km and the remaining 14.1% travelling between 10km and 20km. While this indicates respondent travel behaviour it can also be inferred that most of the respondents would also return their eligible containers to container return locations (particularly retail centres – 52.5%) located within a 10km travel radius<sup>171</sup>. Additionally, supermarkets that have provided consumers with a return-to-retail facility have been reported to see the following benefits<sup>172</sup>:

- Increased foot traffic – where refunds are paid out as in-store credit vouchers driving repeat custom. It has been reported that a survey of RVM users in Sweden found that 93% shopped at the store when they recycled and 44% did their full shopping trip for the week;
- Financial reimbursement – depending on the container scheme, markets may pay retailers a handling fee for each container received, to recuperate any initial investment and operational costs; and
- Brand image – retailers may enhance their corporate image by showing the store’s social responsibility and support of sustainability initiatives.

*Where a return-to-retail model is used in global container return schemes, it has commonly been implemented to improve consumer/customer efficiency, with retailers often providing a reverse vending machine either located inside the retailer or outside*

A case study is presented below of the Norwegian return-to-retail model.

#### 4.1.2.2.1 Norway Case Study

Norway with a return rate of 95%<sup>173</sup>, uses the return-to-retail model with containers able to be returned to 15,000 shops, kiosks and petrol stations meaning consumers do not have to travel far or undertake a special journey to return their eligible containers and receive their deposit. Of note, it is reported that of the 15,000 return locations, 3,700 of these are RVMs with 93% of eligible containers returned via RVMs. Also, Norway (as well as Germany) has provided for people to return their empty eligible containers via a home delivery service (approximately 1% of container returns are via home delivery in Norway) provided by the retailers due to the growth in online shopping. Under this arrangement, consumers buy Infinitum (i.e., Norwegian scheme operator) bags from their online retailer which are barcoded and embedded with a code to track the bag and its contents. It was reported that this means all retailers are treated fairly and people who do not have the time, or capacity due to health issues, to visit a shop can still return their containers for a refund<sup>174</sup>. Further information is required to ascertain how the online retailer is compensated for provision of this service, including where the collector takes the eligible containers, however at the time of writing no detailed information was available.

*The number of container return locations per head of population is an important consideration in the design of a container return scheme as it has impacts across all facets such as scheme costs as well as customer convenience (i.e., number and location of container return points) and engagement in the scheme.*

## 4.2 Container Return Locations

The number of container return locations per head of population is an important consideration in the design of a container return scheme as it has impacts across all facets of a container return scheme, such as scheme costs as well as customer convenience (i.e., number and location of container return points) and engagement in the scheme.

<sup>171</sup> Western Australia Container Deposit Scheme Consultation Summary, 2018 Government of Western Australia Department of Water and Environmental Regulation

<sup>172</sup> <https://www.environmental-expert.com/articles/the-return-to-retail-collection-model-for-container-deposit-schemes-case-study-798020>

<sup>173</sup> [https://ntepa.nt.gov.au/\\_data/assets/pdf\\_file/0011/590798/cds\\_review\\_report\\_ernst\\_young.pdf](https://ntepa.nt.gov.au/_data/assets/pdf_file/0011/590798/cds_review_report_ernst_young.pdf)

<sup>174</sup> <https://www.reloopplatform.org/wp-content/uploads/2019/06/Ontario-Report-Final-Issued-2.pdf>

As Table 9 illustrates, where information was available from across the global container return schemes, the range of return locations per head of population ranged from 1:333 with a return rate of 92% in Norway to 1:16,667 with a return rate of 82% in Saskatchewan (Table 9). Where data was available for the Australian schemes, the number of reported container return locations per head of population varied from 1:12,566<sup>175</sup> in New South Wales (return rate of 71%), 1:13,114 in South Australia (return rate of 76.9%) to 1:15,291 in Queensland (54%) (Table 9). The number of return locations per head of population presented in Table 9 suggests that higher container return rates are generally associated with a larger number of return locations and comparatively lower return rates associated with fewer return locations which may suggest customer convenience and accessibility to return locations are key considerations (see Section 6 for further discussion). However, as noted above, it is important to note that scheme return rates are not only related to the method of eligible container collection available to the consumer. Other influencing factors such as deposit level, population spread, public engagement, and scheme design also influence the return rate and are discussed in the following sections.

**Table 9: Number of container return locations per head of population**<sup>176</sup>

Container Return Scheme	People per container return location	Collection return rate (%) approximate
Norway (Europe)	333	95
Germany (Europe)	630	98
Quebec (Canada)	830	71
Finland (Europe)	877	92
Denmark (Europe)	933	90
Yukon (Canada)	1,364	82
Northwest Territories (Canada)	1,379	88
British Columbia (Canada)	1,712	82
Iceland (Europe)	5,000	90
Newfoundland and Labrador (Canada)	6,579	62
California (United States of America)	9,813	77
Prince Edward Island (Canada)	10,000	80
New Brunswick (Canada)	10,417	73
Nova Scotia (Canada)	11,538	81
New South Wales (Australia)	12,566	71
South Australia (Australia)	13,114	76.9
Ontario (Canada)	14,623	87
Queensland (Australia)	15,291	54
Northern Territory (Australia)	15,385	48
Saskatchewan (Canada)	16,667	82

<sup>175</sup> Ratio of container return location to head of population was estimated based on the number of reported return locations and the state/country population as at 2019. Data accessed from: <http://www.population.net.au>, <https://www.worldometers.info/world-population>, [https://www.parliament.wa.gov.au/publications/tailedpapers.nsf/displaypaper/4011532cad94f6e16ed32e38482582bb001620ed/\\$file/tp+1532.pdf](https://www.parliament.wa.gov.au/publications/tailedpapers.nsf/displaypaper/4011532cad94f6e16ed32e38482582bb001620ed/$file/tp+1532.pdf), <https://returnandearn.org.au/partners/return-point-partners/>, ReLoop pers. comm.

<sup>176</sup> <https://reloopplatform.eu/wp-content/uploads/2018/05/BOOK-Deposit-Global-27-APR2018.pdf>

In addition to population, the number of container return locations is also determined by a range of other factors including:

- Container return facility opening hours (e.g., opening times after-hours and weekends in addition to weekday times [noting container return facility opening times may be influenced by region specific consenting requirements, for example, noise control]);
- Proximity to customer convenience locations (e.g., supermarkets, petrol stations); and
- Customer access (e.g., transportation routes).

As reported by the Queensland Government<sup>177</sup>, the design and location of container return locations will vary depending on location and the needs of the local community, with the specific arrangement of return locations dependent on the scheme design. Additionally, the results of a consumer survey undertaken by the Western Australian Government to inform the design of the Western Australian container return scheme reported that of the 3,256 people surveyed, approximately 97% supported a scheme with more than half of the respondents (52.5%) noting retail centres as the preferred location to return eligible containers and approximately a quarter (27.2) noting preference for dedicated container return locations<sup>178</sup>. As discussed in Section 4.1.2, many European container return schemes operate a return-to-retail model where RVMs are co-located within the retail store, whereas in comparison, South Australia operates a network of manual collection depots.

In parallel to the above list, there are container return location guidelines which may set out the functional siting and operational requirements and the associated measures which must be met in order to comply with the appropriate legislation (as reported in New South Wales<sup>179</sup>).

Section 4.2.1 and Section 4.2.2. provide two (2) Australian case studies discussing the requirements that need to be met in order to establish container return locations.

#### 4.2.1 New South Wales Case Study

New South Wales employs a range of container collection locations that typically include RVMs (including mobile RVMs) in supermarket car parks, manual collection depots in light-industrial areas and other forms of low impact collection infrastructure such as container collection cages in commercial areas<sup>180</sup>. All collection points are coordinated regionally by a central network operator and managed locally by collection point operators which might include the management of return rates of an RVM (i.e., the number of eligible containers returned versus the target return rate per collection point)<sup>181</sup>. Additionally, to ensure consistency (e.g., accessibility, safety, convenience and environmental impact) across the network of container return locations, network operators and collection point operators under the scheme are provided a 'design guide', which sets out:

- Minimum best practice design criteria for siting and installing recycling equipment; and
- Operating and environmental management principles to ensure that the locations of the recycling equipment are well maintained, provide a reliable facility for the collection of empty drink containers and do not impact on the environment, public health or safety.

In addition, while the design guide outlines best practice requirements for siting and establishing locations for recycling equipment so that it will be exempt under the appropriate New South Wales development codes, landowner consent is also required and may also require other New South Wales approvals where appropriate.

<sup>177</sup> Implementing Queensland's Container Refund Scheme, Department of Environment and Heritage Protection

<sup>178</sup> Western Australia Container Deposit Scheme Consultation Summary, 2018 Government of Western Australia  
Department of Water and Environmental Regulation

<sup>179</sup> Design Guide for Container Recycling Equipment and Facilities under the NSW Container Deposit Scheme, 2017

<sup>180</sup> <https://returnandearn.org.au/how-it-works/>

<sup>181</sup> Design Guide for Container Recycling Equipment and Facilities under the NSW Container Deposit Scheme, 2017

Notwithstanding the specific siting and operational requirements, the following lists summarises the appropriate installation locations for:

RVMs (including mobile RVMs and RVMs enclosed within an existing structure such as a retail outlet):

- Public transport facilities such as train stations, bus interchanges, ferry terminals and bus shelters;
- Educational establishments including universities and schools;
- Parks and nature reserves, including picnic areas and barbecue areas;
- Retail premises such as supermarkets, shopping malls, wholesale retailers and retail parking lots;
- Major multi-storey parking lots adjacent to main pedestrian exits;
- Community events;
- Industrial zoned land (e.g., co-located with a materials recovery facility, waste transfer station or resource recovery centre); and
- Retail premises such as supermarkets, shopping malls, wholesale retailers and retail parking lots.

Manual and drop-off locations:

- Established on any land zoned (as per the New South Wales design guideline requirements) and may also be permitted in a business zone where they are ancillary to the lawful use of land only to be carried out for the purpose of a collection point.

Collection cages:

- Car park area of a commercial property;
- In commercial premises;
- Car park area of an educational establishment or community facility; and
- Car park area of industrial-zoned land (e.g., co-located with a materials recovery facility, waste transfer station or resource recovery centre).

## 4.2.2 Northern Territory Case Study

The Northern Territory container scheme reports an eligible container return rate of approximately 48%, with approximately one (1) collection point per 15,300 per head of population (Table 9)<sup>182</sup>. Further, the Northern Territory comprises a large proportion of remote communities due to the geography of the state, therefore the container return scheme offers both collection depots and mobile collection points<sup>183</sup>. A review of the scheme carried out in 2018<sup>184</sup>, noted that there was a lack of facilities to return eligible containers in metropolitan areas, including in areas of high foot traffic such as retail precincts, indicating that convenient publicly accessible collection facilities in areas of high foot traffic, such as retail precincts, were not available at present. Further, the report noted that 20% of the survey respondents noted it was too far to travel to the nearest collection facility and that weekend opening times were not convenient, therefore adversely impacting the likelihood that a consumer would return eligible containers. In this case, it was recommended that the state provide more convenient return locations, including the use of RVMs at retail locations (e.g., car parks of supermarkets or petrol stations)<sup>185</sup>.

<sup>182</sup> [https://ntepa.nt.gov.au/\\_data/assets/pdf\\_file/0011/590798/cds\\_review\\_report\\_ernst\\_young.pdf](https://ntepa.nt.gov.au/_data/assets/pdf_file/0011/590798/cds_review_report_ernst_young.pdf)

<sup>183</sup> <https://ntepa.nt.gov.au/container-deposits/collection-depots>

<sup>184</sup> [https://ntepa.nt.gov.au/\\_data/assets/pdf\\_file/0011/590798/cds\\_review\\_report\\_ernst\\_young.pdf](https://ntepa.nt.gov.au/_data/assets/pdf_file/0011/590798/cds_review_report_ernst_young.pdf)

<sup>185</sup> [https://ntepa.nt.gov.au/\\_data/assets/pdf\\_file/0011/590798/cds\\_review\\_report\\_ernst\\_young.pdf](https://ntepa.nt.gov.au/_data/assets/pdf_file/0011/590798/cds_review_report_ernst_young.pdf)

The 2018 review, reported a range of recommendations to improve the scheme and assist in increasing the return rate, including “*providing communities throughout the whole of the Territory, as far as practicable, with access to facilities for the collection of empty containers and payment of refund amounts*”. To achieve this, the report<sup>186</sup> noted the following issues related to collection locations:

- Consulted stakeholders reported a lack of access to collection facilities in remote communities due primarily to issues associated with the ongoing operation of collection points in remote communities. It was noted that collection points are the primary means for remote communities to participate in the scheme; and
- Consulted stakeholders noted that collection points in remote communities were susceptible to ‘key-person risk’, where a key-person or organisation within the community often drove the ongoing participation and promotion of the scheme in the community. The ongoing success of remote communities’ participation was reported to be directly linked to the key-person’s ongoing efforts to promote scheme participation.

Further, it was recommended that the Northern Territory Environment Protection Agency actively engage and provide ongoing support to key-persons in remote communities to ensure the ongoing, sustainable operation of remote community collection points.

### 4.3 Scheme Awareness

As the point of access for the return of containers, collection points (e.g., manual collection depots) have a significant role to play in providing scheme awareness to the general public, and hence are required to understand the scheme themselves. Therefore, it is important that collection points provide the correct information to consumers when asked about or engaging with the scheme. In many cases, the Managing Agency<sup>187</sup> or Scheme Coordinator is responsible for ensuring convenient access to container refund points and consistent and clear messaging (e.g., signage, branding, bi-lingual and/or multi-lingual language signage) is used by the collection depots to ensure consumers have the information needed to engage with and efficiently use the service<sup>188,189</sup>.

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*As the point of access for the return of containers, collection points (e.g., manual collection depots) have a significant role to play in providing scheme awareness to the general public*

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In the case of RVMs, these collection points are useful in providing educational and promotional material to consumers. Depending on the scheme design, RVMs have the ability to display videos and images to customers as a way to provide promotions for store products (e.g., via return-to-retail) or information on the scheme itself, including charity organisations supported via donation of refunds<sup>190</sup>.

Section 4.3.1 provides a case study example discussing the scheme awareness considerations in order to establish container return locations.

<sup>186</sup> [https://ntepa.nt.gov.au/\\_data/assets/pdf\\_file/0011/590798/cds\\_review\\_report\\_ernst\\_young.pdf](https://ntepa.nt.gov.au/_data/assets/pdf_file/0011/590798/cds_review_report_ernst_young.pdf)

<sup>187</sup> Globally, most container deposit schemes are managed by a central agency that may also be responsible for monitoring and reporting on system performance as well as administration depending on the scheme design. The term ‘Managing Agency’ is used throughout this report to describe this function but may change depending on the final NZ CRS design.

A Managing Agency is typically comprised of representatives from industry, government (both local and central) and others would be responsible for monitoring and reporting on system performance as well as administering the system.

<sup>188</sup> <https://www.qld.gov.au/environment/pollution/management/waste/recovery/reduction/container-refund/container-refund-about>

<sup>189</sup> Evaluation of the Northern Territory Container Deposit Scheme, Department of Environment and Natural Resources, 2018

<sup>190</sup> Reloop Inc., 2018, In Our Opinion: Why deposits make sense for retailers, available from: <https://www.reloopplatform.org/in-our-opinion-why-deposits-make-sense-for-retailers/>

### 4.3.1 Californian Case Study

In California those recycling centres (i.e., collection points) receiving eligible containers must abide by specific requirements, including signage. There are four (4) signs that the Californian law requires every recycling centre to display in a location where the customer can clearly see the information, including:

1. Certification sign – to let customers know that the recycling centre is certified by the State.
2. 'Open' sign – to inform customers that the recycling centre is open for business.
3. 'Hours of operation' sign – to inform customers of the hours the recycling centre is open for business.
4. 'Price' sign – to inform customers of the amount of money the recycling centre is paying for each material type.

With regards to price, the Beverage Container Recycling and Litter Reduction Program was implemented to provide consumers the opportunity to return beverage containers conveniently, efficiently and economically. To enable this, the Beverage Container Recycling and Litter Reduction Program allows certified operators to weigh eligible beverage containers to reduce the time to complete a transaction with the Department of Resources and Recovery Division of Recycling establishing separate minimum reimbursement rates for each material type (e.g., USD\$1.57 per pound for aluminium). However, the recycling centre must also provide the consumer with a container count methodology for up to 50 empty beverage containers of each material type (i.e., aluminium, glass, plastic [each resin type] or bimetal)<sup>191</sup>.

## 4.4 Roles and Responsibilities

Eligible collection points are required to be well informed of their roles and responsibilities in order to support the successful operation of the scheme (e.g., management of containers received) whilst engaging with potential customers (e.g., customer interface). Typically, across the range of container return schemes, the collection depot (e.g., RVM, manual collection depot, return-to-retail) provides the interface between the consumer and the scheme whereby the refund is paid based on the number of eligible containers returned.

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*Eligible collection points are required to be well informed of their roles and responsibilities in order to support the successful operation of the scheme (e.g., management of containers received) whilst engaging with potential customers (e.g., customer interface)*

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In addition to day-to-day activities (e.g., collecting, counting, sorting, refund payments, material preparation and transport), collection points also provide an important customer engagement service for the scheme (see Section 4.1.2 for further information). For example, in Queensland collection point operators and staff are the 'face' of the scheme operator 'Containers for Change' and are expected to provide high levels of customer service to ensure that customers are provided with a convenient place to return eligible containers and that the experience is enjoyable<sup>192</sup>. Additionally, Containers for Change provide collection depots with a marketing toolkit (including style guidelines, logo files and toolkit assets and artwork) to help support the business<sup>193</sup>. This interaction has the benefit of providing a good customer experience whilst also engaging to increase scheme awareness and engagement with waste minimisation initiatives. Additionally, while no detailed information was available regarding collection point site security or whether there was a specific requirement put in place from the scheme, anecdotal evidence collected in December 2019 indicated sites implemented degrees of security through, for example, the inclusion of site security cameras and lockable gates.

<sup>191</sup> Recycler fact sheet, Weights and measures, Beverage Container Recycling and Litter Reduction Program

<sup>192</sup> <https://www.containersforchange.com.au/qld/creating-network-container-refund-points>

<sup>193</sup> <https://www.containersforchange.com.au/qld/creating-network-container-refund-points>

Collection points also interface with the main collector<sup>194</sup> (i.e., the main point at which eligible containers are sorted, verified, processed and bulked for recycling). Depending on the scheme arrangement, this interface may require the collection point to keep records of collected containers, refunds issued and/or undertake regular audits of collected materials (see Section 4.1.2 for further information).

In the Aotearoa New Zealand context, container return facilities located in community hubs such as marae or Resource Recovery Centres may provide an opportunity to engage with and complement zero waste education initiatives through mechanisms, such as, workshops with individuals and whanau – family activities.

#### 4.4.1 Employment Opportunities

The collection and recycling of eligible containers has been reported to create tens of thousands of new jobs in retail, distribution and recycling. Broadly, where information was available from container deposit schemes across the United States of America<sup>195</sup>, employment numbers were reported as either job gains, job losses or net job gains from across the whole container deposit scheme. For example, as was reported in the state of Oregon, 165 -227 jobs were reported to have been lost with a net job gain of between 348 – 410. Further, in the state of Michigan, total job gains were reported at 4,888, job losses of 240 and a net job gain of 4,648 with employment related to the refillable bottle process (i.e., production line workers, sorters and bottle washers), brewers reported an estimate of 68 new hires, beer distributors reported employment gains in the delivery of containers to retailers. As reported, the 240 job losses in the state of Michigan were related to the closing of the National Can Company facility in Livonia and reduction in employment numbers at the Owens-Illinois glass plant in California<sup>196</sup>. The economic and environmental impacts of a container deposit scheme will be further discussed in the following sections.

*In most schemes, the Managing Agency will have specific arrangements in place with the network of collection depots to provide consistency in the forms of communication and the type of information to be shared*

*The collection and recycling of eligible containers has been reported to create tens of thousands of new jobs in retail, distribution and recycling.*

Section 4.4.1.1 provides a South Australian case study of the employment opportunities associated with the container deposit scheme.

##### 4.4.1.1 South Australia Case Study

Where information was available from Australian container deposit schemes, it was reported<sup>197</sup> that collection depots and super collectors<sup>198</sup> accounted for the majority of container deposit scheme employment. Of the super collectors included within the report, the equivalent of 20.5 full-time employees were employed by these organisations. Of the 22 of 114 collection depots surveyed as part of the report<sup>199</sup>, 158 people were employed from across the depots with a large proportion being part-time employees and 91 casual/seasonal positions (note: 80 of these were reported to be with one organisation). Across the state's collection depots, the report estimated that the collection depots employed 820 people in full and part-time roles and further estimated that the collection depots could

<sup>194</sup> Main collector is defined as the main point at which eligible containers are sorted, verified, processed and bulked for recycling. Main collector is also termed 'Super Collector' in South Australia and so these terms may interchange in the text depending on their specific use.

<sup>195</sup> <http://www.bottlebill.org/dev/index.php/benefits-of-bottle-bills/bottle-bills-create-jobs>

<sup>196</sup> <http://www.bottlebill.org/dev/index.php/benefits-of-bottle-bills/bottle-bills-create-jobs>

<sup>197</sup> Container deposit legislation: Economic and environmental impacts (Consultants Report), Environment Protection Authority, 2000

<sup>198</sup> Main collector is defined as the main point at which eligible containers are sorted, verified, processed and bulked for recycling. Main collector is also termed 'Super Collector' in South Australia and so these terms may interchange in the text depending on their specific use.

<sup>199</sup> Container deposit legislation: Economic and environmental impacts (Consultants Report), Environment Protection Authority, 2000



provide up to another 20 casual positions throughout the year. However, it is important to note that employment opportunities resulting from a container deposit scheme are typically related to the cost structure of the scheme (e.g., handling fees paid to collection depots in South Australia)<sup>200</sup>. While there was limited information directly related to the opportunities to lift employment associated with a container deposit scheme, there may be opportunities in Aotearoa New Zealand to consider workplace education programmes to take people through the sector or potentially social and indigenous procurement opportunities (e.g., workplace employment targets).

## 4.5 Communication with the Managing Agency

The communication that is carried out between container return facilities and scheme Managing Agencies has been touched upon in previous sections (see Section 4.4). In most schemes, the Managing Agency will have specific arrangements in place with the network of container return facilities to provide consistency in the forms of communication and the type of information to be shared. However, no specific information was available at the time of writing to detail the content of these arrangements or the specific information requirements apart from numbers of containers collected and refund amounts issued.

For example, in Queensland, COEX has a container collection arrangement in place with the container return facilities which sets out the reporting requirements in order to ensure transparency of information (e.g., numbers of containers collected, sorted and transported<sup>201</sup>). Further, in New South Wales, the network operator (i.e., TOMRA Cleanaway) works with the container return facilities to maximise container returns from the seven (7) state zones<sup>202</sup>.

## 4.6 Bulk Transportation of Material

The bulk transportation of scheme materials is dependent on the method of container collection and the degree of sorting undertaken by container return facilities (e.g., RVM, manual collection depot). In the case of RVMs, eligible containers may be sorted by the type of material such as plastic containers and cans, or fully commingled, both methods influencing the process by which a scheme Material Consolidation Facility (discussed further in Section 7), sorts, verifies and processes the eligible materials<sup>203</sup>. Similarly, manual container return facilities as used in Australian schemes, operate under specific legislation and guidelines (e.g., sorting by brand and material type) as set by the specific scheme Managing Agency.

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*The bulk transportation of scheme materials is dependent on the method of container collection and the degree of sorting undertaken by a collection point (e.g., RVM, manual collection depot).*

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In the following sections, bulk transportation of material focusses on the process by which containers are moved from:

1. The point of container return (e.g., manual return location, RVM, automated depot) to the scheme Material Consolidation Facility (Section 4.6.1); and
2. Material Processing Facility to the re-processor and/or end-market (Section 4.6.2).

Transportation related to consumers returning eligible containers for a refund is dependent on the convenience of the container return facility (e.g., return-to-retail, manual depot) and other factors including, transport infrastructure and population density<sup>204</sup>. Security and fraud prevention will be further discussed in throughout the following sections.

<sup>200</sup> Container deposit legislation: Economic and environmental impacts (Consultants Report), Environment Protection Authority, 2000

<sup>201</sup> Container refund scheme price monitoring review, Issues paper, Queensland Productivity Commission, 2019

<sup>202</sup> <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/return-and-earn>

<sup>203</sup> Review of Packaging Deposit Systems for the UK (Consultants Report), 2008

<sup>204</sup> <https://www.uts.edu.au/sites/default/files/whiteetal2001depositsNSWvol2.pdf>

### 4.6.1 Bulk Transportation of Material from a Container Return Facility to a Scheme Material Consolidation Facility

Once eligible containers have been returned to one of the manual container return facilities (e.g., manual return depot, 'drop-off') or automated container return facilities (e.g., RVM or return-to-retail), the containers must be sorted, bulked and sent for reprocessing. The transportation of scheme materials from a container return facility (e.g., manual collection depot) to the Material Consolidation Facility (MCF) is largely dependent on individual contractual arrangements (e.g., reverse logistics, back-haul contractual arrangements, contracted transport logistics providers) which are commonly established by the scheme Managing Agency.

Section 4.6.1.1 and Section 4.6.1.2 provide case studies of how material is transported from a container return facility to the scheme MCF.

#### 4.6.1.1 South Australia Case Study

In South Australia, there are three (3) main super collectors responsible for managing the scheme and processing collected eligible scheme containers comprising:

- Marine Stores Pty Ltd, which is owned by Lion Pty Ltd (Lion) (through the South Australian Brewing Company Pty Ltd) (75%) and Coopers Brewery Ltd (Coopers) (25%);
- Statewide Recycling Pty Ltd, a wholly owned subsidiary of Coca-Cola Amatil (Aust) Pty Ltd; and
- Flagcan, a wholly owned subsidiary of Central Recyclers (Aust) Pty Ltd (Central Recyclers).

Once the collection depot has reimbursed the consumer, the collection depot then sorts the various container types and prepares them for transport to one of the above three (3) listed industry 'super collectors' (defined in the Environment Protection Act 1993 as "a person who, whether personally or through an agent, collects, handles and delivers for reuse, recycling or other disposal, containers received from collection depots")<sup>205,206,207,208</sup>:

Further, the super collector<sup>209</sup> (i.e., scheme Material Consolidation Facility) has agreements in place with approved collection depots (i.e., container return facility) to collect eligible containers and act as agents for various brand owners and beverage distributors (i.e., aluminium cans). As such, the super collector requires containers collected from the contracted collection depots to be sorted by generic brand<sup>210</sup> (e.g., aluminium cans) or material type (e.g., white PET, coloured and clear PET). Further, it is understood from direct communications with a South Australian super collector that approved collection depots negotiate contract terms directly with each super collector.

The South Australian super collectors are reported to have the following arrangements in place between them regarding the control of different container materials which has been reported to cause some difficulties with collectors due to several arrangements being required for material types<sup>211,212</sup>:

- Statewide handles all plastic (Polyethylene terephthalate (PET) and high-density polyethylene (HDPE)) and liquid paperboard (LPB) and its own customers' aluminium cans;

<sup>205</sup> Collection Industry Arrangements under Container Deposit Legislation (Consultants Report), South Australia Environmental Protection Agency, 2005

<sup>206</sup> <http://www.recyclesa.com.au/>

<sup>207</sup> Container deposit guidelines: EPA 1024/19

<sup>208</sup> Australian Competition and Consumer Commission. AA1000415, 2018

<sup>209</sup> Main collector is defined as the main point at which eligible containers are sorted, verified, processed and bulked for recycling. Main collector is also termed 'Super Collector' in South Australia and so these terms may interchange in the text depending on their specific use.

<sup>210</sup> Container Deposit Guidelines: EPA104/19

<sup>211</sup> Australian Competition and Consumer Commission. AA1000415, 2018

<sup>212</sup> Operation of the South Australian and Northern Territory container deposit schemes, 2012

- Marine Stores handles all glass containers and its own customers' aluminium cans; and
- Flagcan does not handle any containers but has arrangements in place with Statewide to handle its customers' containers.

Collection depots sort the containers (collection depots are not reported to separate containers by size) received by material which are then delivered to the respective super collector as follows<sup>213,214</sup>:

- Aluminium cans are separated into beverage brands that have contracted with Statewide (which are placed into either cages, wool bales or 'blocks'), and beverage brands that have contracted with Marine Stores (which are placed into bales);
- PET plastic containers and LPB cartons are placed unsorted (or 'bulked') into cages or wool bales for collection by Statewide;
- HDPE plastic containers are placed unsorted into wool bales for collection by Statewide; and
- Glass is separated into colours (amber, flint and green) for Marine Stores and is placed into bins or crushed into 'glass cullet' by those depots with a crushing machine, to save storage and transport costs. Glass is then delivered to the Visy Recycling beneficiation plant.

Once the specific materials are delivered to and verified (i.e., audited) by the respective super collector (including examination of contamination and compliance), the collection depot receives the appropriate reimbursement of deposits for containers and a handling fee (i.e., handling fee is paid for the collection service provided by the collection depot). Due to the volume of containers collected by super collectors (587 million in 2016-17), the amount paid by super collectors to collection depots (i.e., refund amount and handling fee) was reported to generally be determined via an estimate based on weighing of the eligible containers and auditing, rather than by a count<sup>215</sup>. The process (i.e., weighing or count) by which the super collector determines the amount to be paid to a collection depot will be covered in Section 7.

Further, due to the geography of South Australia and the bulk of the population residing in metropolitan Adelaide, centres have been established in several regional areas to service those South Australian residents that live in regional and/or remote areas. These regional centres include<sup>216</sup>:

- Mount Gambier;
- Riverland Regional Centre;
- Kadina; and
- Port Pirie.

In regional centres, small depots are reported to deliver cans and plastic containers to the above listed centres where they are compressed prior to bulk transport to the relevant processors<sup>217</sup>. For example, PET is reported to be baled in country areas to improve the efficiency and reduce the cost of transporting materials from rural areas.

In addition to South Australian collection depots operating under the Beverage Container provisions of the Environment Protection Act 1993, some depots also accept additional recyclable materials<sup>218</sup> (e.g., whiteware, cardboard, other recyclable items and scrap metal). However, depending on the quantities and types of additional recyclable materials accepted, the collection depot may also be required to be a licensed 'waste and recycling depot'. Some collection depots are also reported to use a baling machine to compress sorted cans and/or plastic containers into blocks to save storage and

<sup>213</sup> Australian Competition and Consumer Commission. AA1000415, 2018

<sup>214</sup> Environmental Guidelines, Collection Depots, South Australia Environmental Protection Agency, 2000

<sup>215</sup> Australian Competition and Consumer Commission. AA1000415, 2018

<sup>216</sup> Environmental Guidelines, Collection Depots, South Australia Environmental Protection Agency, 2000

<sup>217</sup> Environmental Guidelines, Collection Depots, South Australia Environmental Protection Agency, 2000

<sup>218</sup> Environmental Guidelines, Collection Depots, South Australia Environmental Protection Agency, 2000

transport costs, and/or may provide a container pick-up service to other collection depots or local businesses<sup>219</sup>.

In addition to the requirements of the Beverage Container provisions of the Environment Protection Act 1993, the environmental guidelines also provide recommendations to the collection depot to minimise their environmental impact (e.g., sorting recyclable material into processing streams and super collector categories, storing and stockpiling of recyclable material on-site)<sup>220</sup>.

#### 4.6.1.2 Queensland Case Study

In Queensland, Container Exchange (COEX)<sup>221</sup> manages the network of container collection locations by ensuring collection agreements with provisions for sorting the containers and transporting (or arranging for transport of the containers) as well as record keeping (e.g., information about the refund amounts paid and the containers collected, sorted and transported) are in place with each individual collection location<sup>222</sup>. Additionally, COEX pays logistics providers to collect and transfer the eligible containers collected at each of the collection locations to the appropriate processor<sup>223</sup>. Further, to ensure collection depots sort eligible containers according to the specific processor requirements, processors supply the collection depots with a bin, cage, wool bale, or bulk bags for collection, however no information was available on the financial arrangement in place to manage this.

In addition, COEX also manages the containers processed by Material Recovery Facilities (MRFs) where eligible containers have entered the kerbside recycling service. In this case, each MRF enters into a material recovery agreement with COEX to receive payment for sorting and preparing containers for recycling<sup>224,225</sup>. Where the MRF receives eligible containers through the kerbside collection service, a refund sharing arrangement is established with the local government for the 10-cent refund payments which are made by COEX<sup>226</sup>. Notwithstanding this intended arrangement, there are reports noting local councils are experiencing difficulty reaching agreement on eligible container revenue sharing arrangements with their respective MRF, with some councils unable to secure new arrangements consistent with the current transitional arrangement that allow for a 50% revenue sharing split (minus audit costs)<sup>227,228,229</sup>. The specific MRF systems and revenue sharing process will be discussed further in Section 7.

#### 4.6.2 Bulk Transportation of Scheme Material from a Material Processing Facility to the Material Re-Processor and/or End-Market

Once eligible containers have been sorted and bulked by the respective Material Processing Facility (e.g., scheme Material Consolidation Facility, Material Recovery Facility, Waste Transfer Station), the containers are typically sent for market re-processing and/or direct to end-markets. As described in Section 4.6.1, the bulk transportation of scheme materials from a Material Processing Facility (e.g., MCF, MRF) is largely dependent on individual contractual arrangements (e.g., reverse logistics, back-haul contractual arrangements, and contracted transport logistics providers) which are commonly established by the scheme Managing Agency.

<sup>219</sup> Australian Competition and Consumer Commission. AA1000415, 2018

<sup>220</sup> Environmental Guidelines, Collection Depots, South Australia Environmental Protection Agency, 2000

<sup>221</sup> Container Exchange (COEX) is the not-for-profit origination created to establish and run the Containers for Change scheme in Queensland. <https://www.containerexchange.com.au/about-us/>

<sup>222</sup> Container refund scheme price monitoring review, Issues paper, Queensland Productivity Commission, 2019

<sup>223</sup> Container refund scheme price monitoring review, Issues paper, Queensland Productivity Commission, 2019

<sup>224</sup> <https://www.containersforchange.com.au/qld/processors>

<sup>225</sup> Container refund scheme price monitoring review, Issues paper, Queensland Productivity Commission, 2019

<sup>226</sup> Container refund scheme price monitoring review, Issues paper, Queensland Productivity Commission, 2019

<sup>227</sup> [https://www.lgaq.asn.au/updates/-/asset\\_publisher/2wQ56Gh3C4th/content/id/10221430](https://www.lgaq.asn.au/updates/-/asset_publisher/2wQ56Gh3C4th/content/id/10221430)

<sup>228</sup> Waste Reduction and Recycling (Container Refund Scheme) Amendment Regulation 2018: Part 7

<sup>229</sup> Waste Reduction and Recycling (Container Refund Scheme – Material Recovery Agreements) Amendment Regulation 2019

The process by which bulk scheme materials are transported from the Material Processing Facility to the end-market in Australia are described for the South Australian and Queensland container return schemes.

Section 4.6.2.1 and Section 4.6.2.2 provide case study examples of how scheme material collected and recovered in South Australia and Queensland are transported from the Material Processing Facility to the end-market.

#### 4.6.2.1 South Australian Case Study

In South Australia, the recycling of aluminium, steel, liquid paperboard and plastic (PET, HDPE, PVC) containers is carried out through markets sourced by the super collectors (see Section 4.6.1.1)<sup>230,231</sup>. Non-refillable glass containers are sold to a glassmaker for the manufacture of new bottles, however specific details of the glass manufacturer(s) were not provided<sup>232</sup>.

*The responsibility of financial accountability within a scheme lies with multiple parties, including the government agency, Managing Agency/scheme coordinator, network operator, beverage supplier, MRFs and collection point, each with their own specific accountability systems and requirements.*

#### 4.6.2.2 Queensland Case Study

In Queensland, Container Exchange (COEX) manages the sale of collected, sorted and processed eligible containers from collection depots and from Material Recovery Facilities (MRFs) via an online auction portal where recyclers can purchase materials. Briefly, the online auction portal is in place to manage the sale of eligible scheme materials (i.e., sourced from collection depots or MRFs) to approved members of the Recycling Panel members. Only registered recyclers can buy through the portal<sup>233,234</sup> and have the ability to view upcoming auctions, bid on auction lots (which enables members to view lot details including, available lots and quantities, material source, pick-up location, images, current bid [e.g., AUD\$20.00/tonne] and minimum bid value [e.g., AUD\$30.00/tonnes] and processor details) or purchase via 'Buy now' direct sale offers (in addition to those details for the auction lots, the 'Buy now' option also includes the sale price [e.g., AUD\$111.00/tonne]) or via existing commercial arrangement<sup>235</sup>. Further, if a recycler is successful in bidding on a lot(s), the recycler is responsible for declaring the destination of the material, collecting the material in a timely manner and paying for the material per the sales agreement<sup>236</sup>.

As reported by COEX, any auction returns are reinvested into COEX to fund the running costs of implementing the scheme (i.e., the 10-cent refund at container collection depots and the cost of administration and logistics)<sup>237</sup>. Once the material is sold, the processors are then responsible for managing the transfer of materials to the recycler who has purchased the product, with the fee for this service (i.e., transfer of material) paid for by COEX.

## 4.7 Financial Accountability Systems

The responsibility of financial accountability within a scheme lies with multiple parties, including the government agency, Managing Agency/Scheme Coordinator, Network Operator, Beverage Supplier, MCFs and container return facility, each with their own specific accountability systems and requirements. For the purpose of this section, financial accountability is discussed for the container return facility only, however it is acknowledged that this is linked to the broader scheme design and

<sup>230</sup> Container deposit scheme – a South Australian environmental success story: EPA 74/20

<sup>231</sup> Operation of the South Australian and Northern Territory container deposit schemes, 2012

<sup>232</sup> Operation of the South Australian and Northern Territory container deposit schemes, 2012

<sup>233</sup> <https://www.containerexchange.com.au/industry-partners/>

<sup>234</sup> [https://www.containersforchange.com.au/ecourse-processing-facilities/story\\_html5.html](https://www.containersforchange.com.au/ecourse-processing-facilities/story_html5.html)

<sup>235</sup> [https://www.containersforchange.com.au/ecourse-auction-portal/story\\_html5.html](https://www.containersforchange.com.au/ecourse-auction-portal/story_html5.html)

<sup>236</sup> [https://www.containersforchange.com.au/ecourse-auction-portal/story\\_html5.html](https://www.containersforchange.com.au/ecourse-auction-portal/story_html5.html)

<sup>237</sup> <https://www.containerexchange.com.au/industry-partners/>

therefore further information (e.g., the financial operation of a scheme, IT systems, audit and fraud systems) will be discussed throughout the following sections.

In New South Wales, the container return facility operators pay the appropriate eligible container refund to consumers based on the number of containers returned. Approved container return facility operators (i.e., operators must be approved by the Environment Protection Authority) receive a float from the Network Operator (i.e., TOMRA Cleanaway) to cover consumer refunds and a handling fee to cover the cost of providing the service to the community<sup>238</sup>. The financial arrangement and accountability system related to the network operator will be discussed further in the following sections.

Additionally and as reported in Section 4.5, in Queensland, the container return facilities (i.e., container refund point) via the specific container collection agreement held with COEX must keep records and report to COEX the refund amounts paid and the numbers of containers collected, sorted and transported<sup>239</sup>.

## 4.8 The Aotearoa New Zealand Context

As discussed throughout this section, the container return facility is a critical component of the NZ CRS design as it is the location where consumers interact with the NZ CRS by providing facilities that are convenient, accessible and include a range of options where eligible scheme containers can be returned for the appropriate deposit refund. The container return facility also represents the first stage in the scheme where containers are sorted into the eligible container grades (e.g., material type) before transportation to the centralised scheme Material Consolidation Facility for further verification and processing (see Section 7 for further discussion). Additionally, it is recognised that consumers may place eligible scheme containers in their kerbside recycling bin and general refuse bin, or, dispose of their containers to the taiao - environment (e.g., litter). While these methods provide potential pathways for eligible scheme containers to re-enter the NZ CRS, the following discussion focusses on the return of eligible scheme containers to NZ CRS container return facilities only. The reader is referred to Section 7 for further discussion on eligible scheme containers returned via the kerbside recycling bin and the general refuse bin.

As has been reported from across the many global container return schemes, consumer convenience and accessibility to container return facilities have been key design considerations. To better understand the Aotearoa New Zealand consumer, a survey was undertaken by ConsumerNZ between February and March 2020<sup>240</sup>, with 2,114 New Zealanders over the age of 18 surveyed (53% female, 47% male) to gauge views on recycling and support for a container return scheme. Of those surveyed, 79% reported convenient drop-off points (i.e., container return facilities) and 67% reporting the need for easy to understand information regarding what containers the scheme covers as two (2) key factors for the success of a NZ CRS. Considering the convenience and accessibility of a NZ CRS, of those surveyed 70% noted that supermarkets would provide the most convenient place to return scheme eligible containers followed by 63% at collection depots (e.g., community recycling centres and recycling facilities), 40% to other retail outlets (e.g., bottles stores and dairies) with the remaining 8% noting other locations or would not bother returning the containers (Figure 16).

<sup>238</sup> <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/return-and-earn/how-return-and-earn-works/scheme-financial-structure>

<sup>239</sup> Container refund scheme price monitoring review, Issues paper, Queensland Productivity Commission, 2019

<sup>240</sup> ConsumerNZ Beverage Container Return Scheme Survey: Key Results 2020



**Figure 16: Support for New Zealand Container Return Scheme Facilities**

Consequently, to understand the New Zealand context regarding the number of anticipated container return facilities needed to provide the consumer with a convenient and accessible service, several layers of information were assessed, including:

- The total number of eligible scheme containers expected to flow through the NZ CRS on an annual basis;
- Location of existing infrastructure (e.g., resource recovery centres, community resource recycling centres);
- Location of existing supermarkets (i.e., PAKnSAVE, Countdown, Fresh Choice, New World, SuperValue); and
- Aotearoa New Zealand locations not currently serviced by either a supermarket and/or resource recovery centres and/or community recycling centre.

For clarity, it is important to note here that the following discussion and associated maps are focused on community resource recovery centres simply to provide an indication of the possible existing infrastructure that could represent a NZ CRS container return facility. It does not preclude public (e.g., local council owned or contracted resource recovery parks) or privately-owned facilities from providing a NZ CRS container return facility. As will be discussed further in Section 14, the NZ CRS Managing Agency will be responsible for procuring and registration of the required container return facility services.

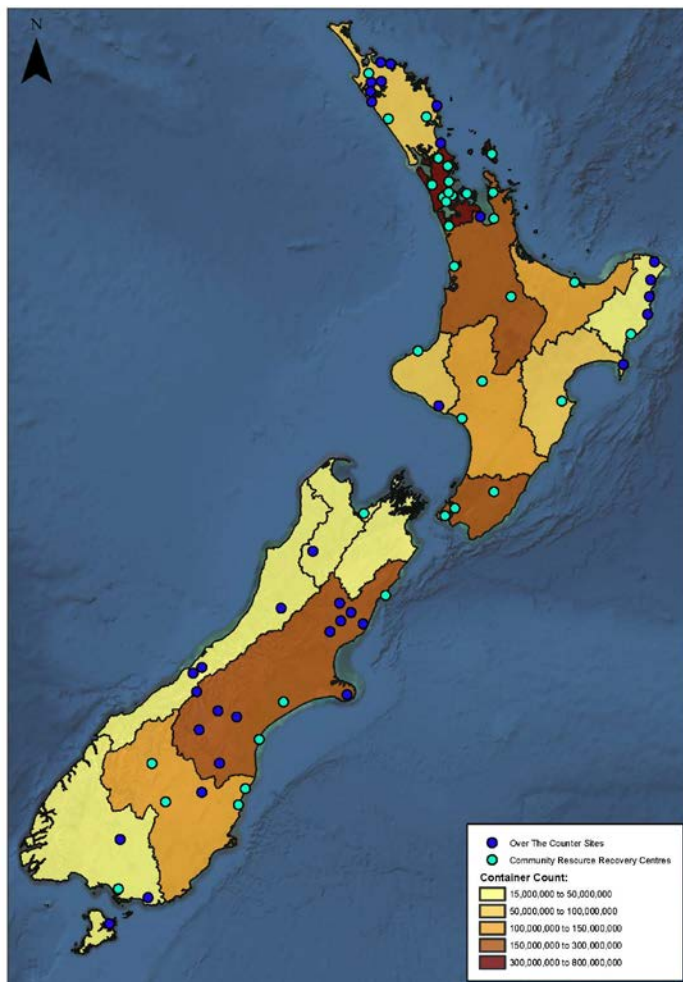
Looking at community resource recovery centres in more detail such as the Zero Waste Network (ZWN), community recycling centres have typically been set up to provide recycling and reuse services for their respective communities (e.g., Xtreme Zero Waste Raglan). The ZWN<sup>241</sup> was established in 1989 as an informal network of more than 100 community enterprises operating across Aotearoa New Zealand. As a collective, ZWN is reported to have approximately 30-years of industry experience collecting, receiving, processing and distributing recyclable and recoverable materials alongside providing community engagement and education initiatives. As reported by ZWN, the network has diverted approximately 30,000tonnes of resources from ruapara - landfill with 460 full-time equivalent employees (a total of 707 employees) and a turnover of NZD\$30million<sup>242</sup>. Revenue at these facilities is generated by selling diverted goods and materials from ruapara - landfill by enabling the community to bring items (e.g., clothing and furniture) they no longer need whilst also creating employment opportunities for the local community. Additionally, the ZWN supports the establishment of other networks, for example, Xtreme Zero Waste supported Para Kore which integrates mātauranga Māori and Zero Waste principles and practice. Para Kore is now reported by ZWN to be an independent organisation comprising 421 Para Kore Marae working with marae, Māori communities, Kōhanga Reo and Kura Kaupapa Māori.

<sup>241</sup> Enterprising Communities: Creating new opportunities for New Zealanders through the Container Return Scheme. Zero Waste Network 2020

<sup>242</sup> Enterprising Communities: Creating new opportunities for New Zealanders through the Container Return Scheme. Zero Waste Network 2020

Given the existing Aotearoa New Zealand network of such facilities there is opportunity for the NZ CRS to integrate these sites into container return facilities by acknowledging their unique attributes, including, for example, existing relationships with the community and Mana Whenua, existing infrastructure and the network of locations throughout Aotearoa New Zealand. However, as noted earlier, public (e.g., local council owned or contracted resource recovery parks) or privately-owned facilities are not precluded from providing a NZ CRS container return facility. Further, it is acknowledged that any NZ CRS container return facility will be required to meet and adhere to specific standards (e.g., best practice guidelines including health and safety, operating and environmental management principles), standards which would be detailed in any contractual and registration arrangements.

Figure 17 below illustrates the container count per region overlaid with community resource recovery centres where available location information was available, and indicative over-the-counter locations to service those areas without a community resource recovery centre. Clearly, the number of community resource recovery centres is highest in the Tāmaki Makaurau - Auckland region with sparse coverage throughout the rest of Aotearoa New Zealand with no community resource recovery centre in some regions (e.g., West Coast of the South Island). Consequently, Figure 17 illustrates that the known network of community resource recovery centres, needs to be complemented with, for example, over-the-counter facilities (or other form such as RVMs, return-to-retail) to provide a service to consumers who reside in regional/remote areas of Aotearoa New Zealand.



**Figure 17: Regional container count and location of community resource recovery centres (light blue circles) and indicative over-the-counter locations (dark blue circles)**

Figure 18 below illustrates the container count per region overlaid with the location of the PAKnSAVE, Countdown, Fresh Choice, New World and SuperValue grocery supermarkets and which clearly shows, as expected, the presence of supermarkets in proximity to main city areas (e.g., Wellington,



Queenstown, Christchurch) with somewhat limited presence in regional/remote areas, such as, the West Coast of the South Island and the East Cape of the North Island. Consequently, while Figure 18 illustrates greater national coverage of grocery supermarkets, there are clearly areas of Aotearoa New Zealand that appear not well serviced by grocery supermarkets and which would benefit from another type of NZ CRS container return facility (e.g., community resource recovery centre, RVM).

Further, acknowledging the feedback received from the SDWG and there being no global precedence of a voluntary return-to-retail underpinned by a mandatory approach, the Project Team, on balance, considers the NZ CRS return-to-retail option to include a voluntary approach only. However, under a voluntary approach it will be a requirement of the NZ CRS Managing Agency to ensure the arrangements with retailers to host a container return facility represents a win-win outcome, which may include the following:

- Provide retail stores with the opportunity to propose how they will voluntarily offer a container return facility option to customers;
- For clarity, retail involvement is seen as an opportunity to enhance connection with consumers;
- Proposals would need to comply with certain predetermined criteria, for example, consumer convenience, accessibility, capacity; and
- Retailers with approved voluntary container return facility options will then be required to have these facilities implemented by scheme commencement.

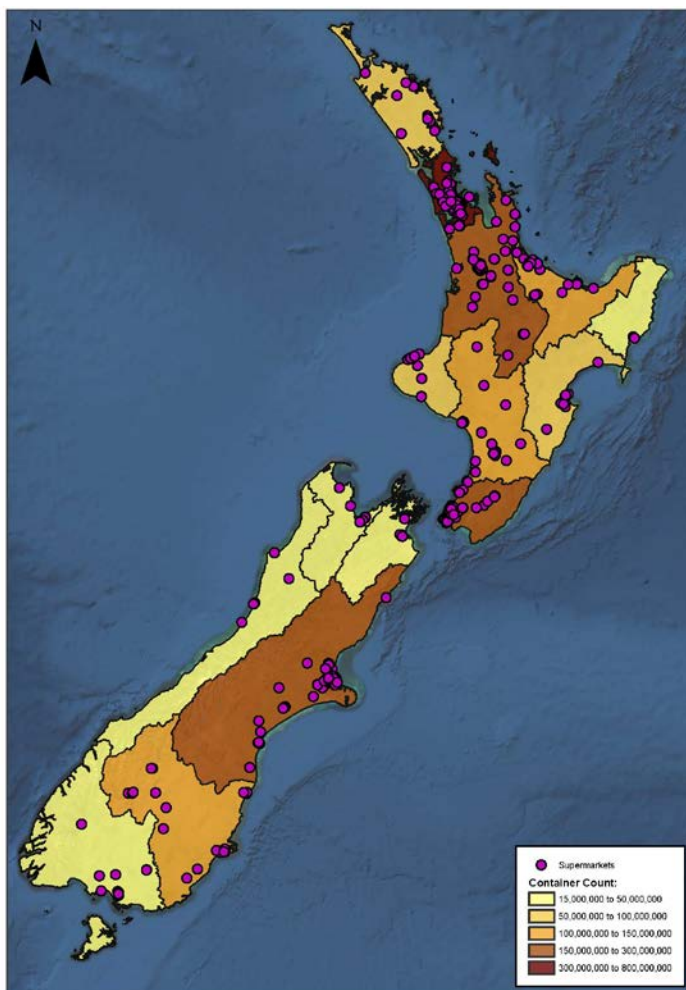


Figure 18: Regional container count and location of grocery supermarkets<sup>243</sup>

<sup>243</sup> PAKnSAVE, Countdown, Fresh Choice, New World, SuperValue

Based on learnings from overseas, feedback from the design process, results of the ConsumerNZ survey and the outputs from financial modelling, it is proposed that the NZ CRS initially establish approximately 415 container return facilities (e.g., manual depots, RVMs, automated depots) across Aotearoa New Zealand assuming the NZ CRS starts on the 'go live' date of 01 July 2022 (equating to approximately 12,500 people per container return facility with a projected 2023 population of 5.213million). In comparison, based on 2019 population figures and a ratio of 12,500 people per container return facility, the NZ CRS would require a minimum of 393 container return facilities to provide a service across Aotearoa New Zealand). Also, each of these sites are anticipated to have informal drop-off points located to increase customer convenience and provide additional volumes of containers to improve financial viability. The benefit of this approach is to afford the NZ CRS time to become established and scheme awareness campaigns (e.g., marketing and communication) to become embedded within the community. The NZ CRS Managing Agency will be required to monitor the performance of each geographical area such as containers returned per capita and take appropriate action as required (e.g., as part of the Managing Agency annual scheme reviews). This action would include working with container return facilities, establishing more return sites and increasing awareness (e.g., ensuring connection of the NZ CRS with the community). While the exact make-up of container return facilities will be determined by the scheme Managing Agency and the interim Governance Board during the NZ CRS implementation stage (see Section 14 and Section 15 for further discussion), it is anticipated that a range of facilities will be provided for.

Further, the NZ CRS Managing Agency will need to assess other factors, including but not limited to, Aotearoa New Zealand's existing infrastructure (e.g., public and private resource recovery parks), population densities (e.g., remote, rural, urban) and the expected volume of eligible containers by region to ensure an efficient and cost effective network of container return facilities is established. It will also be critically important to ensure that the 350 registered container return facilities (1:12,500 people) are established (including scheme Material Consolidation Facilities [see Section 7] and Material Re-Processors [see Section 8]) at the outset of the NZ CRS 'go live' date to ensure there is sufficient network capacity to receive the eligible scheme containers and importantly provide a consumer focussed service.

Another important consideration in the establishment of NZ CRS container return facilities is the opportunity to create employment across Aotearoa New Zealand. While the number of jobs created by a NZ CRS will largely depend on the make-up of the various container return facility type (e.g., RVM, manual collection depot), it is acknowledged that in some cases the use of technology may limit the opportunities presented by the NZ CRS. As a result, further investigation will be required in the implementation stage to ascertain the net employment gain. Looking at the current Aotearoa New Zealand spread of ZWN sites and using global information on container return scheme job estimates and container numbers/volumes, it has been reported<sup>244</sup> that the NZ CRS may result in approximately 2,230 direct jobs (NOTE: approximately 2.3billion eligible scheme containers, approximately 304,000tonnes of eligible scheme material, container return scheme generates 7.34 jobs per 1,000tonnes of material<sup>245</sup>). Further, looking at the NZ CRS in more detail, an independent analysis commissioned by the NZ CRS Project Team estimated that the scheme would generate a net increase of approximately 1,300 jobs. While the type and nature of these potential employment opportunities will require further investigation during the implementation stage, the NZ CRS has the potential to provide the Aotearoa New Zealand economy in a post COVID-19 environment with an avenue to create meaningful work and enterprise opportunities for people in their own communities.

One of the key contributing factors in providing a customer focussed NZ CRS will be the involvement of the Managing Agency regional co-ordinators (see Section 14 for further discussion). The presence of

<sup>244</sup> Enterprising Communities: Creating new opportunities for New Zealanders through the Container Return Scheme. Zero Waste Network 2020

<sup>245</sup> Clarissa Morawski and Jeffery Morris (2011), Ph.D titled Returning to Work - Understanding the Domestic Jobs Impacts from Different Methods of Recycling Beverage Containers

these key contacts will ensure a bespoke service provision based on the needs and demands of that particular region. In particular, seasonal variation due to the impact of visitors to the regions will require a tailored solution that is informed by on the ground input. Initially, it is proposed to have one co-ordinator per region and review this as the scheme matures.

## 4.9 Summary of Key Findings

Broadly, the outcomes of the above research show that a wide range of manual and automated container collection methodologies are employed throughout global container return schemes and that these provide differing container return rates, varying employment opportunities and different levels of customer convenience. Similarly, the research shows that a customer's awareness of, and engagement in, a container return scheme is influenced by, for example, the number, type and location of container return facilities.

Generally, container return schemes associated with a high container return rate are those that include a return-to-retail facility where the retailer provides a convenient location for customers to return eligible containers (e.g., carpark located RVM, instore RVM) whilst also supporting customer engagement opportunities (e.g., retailer marketing opportunities).

Broadly, those schemes employing a combination of manual and automated container return facilities, have shown high container return rates coupled with a higher rate of employment opportunities, customer convenience and a wider range of options for customers to redeem the refund amount (including cash, voucher, electronic funds transfer, donation). Further, it is important to note that the maturity (i.e., years of operation) of a container return scheme, as well as several other factors (e.g., location of return facilities and consumer understanding of the scheme) will positively influence container return rates. Taking all the above into consideration and specifically:

- Efficient global container return schemes employ a range of manual (e.g., manual depot) and automated container return facilities (e.g., Reverse Vending Machine) methodologies;
- Customer focussed and convenient container return schemes, include a range of refund options including cash, electronic funds transfer, supermarket voucher, donation or scheme credits (e.g., loyalty card, gift card);
- Customer convenience and accessibility (e.g., opening times, proximity to convenience locations) are key aspects when determining location and number of collection facilities, acknowledging that the cost of a customer centric service may be greater than a commercially orientated service; and
- Container return schemes typically associated with high return rates, includes a mandatory return-to-retail option versus a voluntary approach.

the NZ CRS will provide a range of container return facility options.

Based on learnings from overseas, feedback from the design process and the outputs from financial modelling it is proposed that the NZ CRS initially establish approximately 415 (i.e., a projected population of 5.213million as at 2023 and a ratio of 12,500 people per container return facility) registered container return facilities across Aotearoa New Zealand noting that each of the approximately 415 registered sites are anticipated to have informal drop-off points located to increase customer convenience and provide additional volumes of containers to improve financial viability. The NZ CRS Managing Agency will be required to monitor the performance of each geographical area such as containers returned as a proportion of what is available in the area and take appropriate action as required. This action would include working with container return facilities, establishing more return sites and increasing awareness. It is further recommended that no later than 9-months before the scheme commences a final review is undertaken by the regulatory authority to confirm if the establishment of a minimum of approximately 415 container return facilities is still appropriate or should be increased based on any new information available at the time.

Acknowledging the feedback received from the SDWG and there being no global precedence of a voluntary return-to-retail underpinned by a mandatory approach, the Project Team, on balance, considers the NZ CRS return-to-retail option will include a voluntary approach only. Under a voluntary approach it will be a requirement of the Managing Agency to negotiate arrangements with retailers to host a container return facility represents a win-win outcome. Further, the establishment of the range and network of container return facilities will need to consider factors, including but not limited to, Aotearoa New Zealand's existing infrastructure and population densities (e.g., rural, urban) to ensure consumers are provided with a cost efficient and convenient NZ CRS.

Further, the arrangements associated with the transportation of collected containers to a scheme Material Consolidation Facility, Material Re-Processor and/or direct to end-markets differs across the global container return schemes depending on the material ownership, sale of products and associated revenue arrangements. Across all global schemes, container verification and fraud prevention measures are key components in managing the sale and transportation of materials as is the redistribution and/or reinvestment of revenue generated from the sale of material.

## 4.10 Summary of Design Feedback Received

The following table provides a high-level summary of the feedback received from the Scheme Design Working Group (SDWG) members after reviewing the section information. As many suggestions as possible have been incorporated but the NZ CRS Project Team acknowledge that the wide range of views expressed meant not every edit could be accepted. The NZ CRS Project Team is grateful for those who have provided feedback and where possible these have been used to provide further clarity and context throughout this section and to identify areas requiring further assessment during the NZ CRS implementation stage (Section 17).

<b>Container Return Facilities Feedback – High Level Summary</b>	
<b>Areas for further Investigation</b>	
Collection facility comparative assessment of safety risks, costs, collection efficiencies, capacities, planning requirements, consumer appeal, travel and carbon footprint, long-term sustainability and role in climate change mitigation (see Section 17 for further discussion).	For RVMs, information on the sorting versus footprint requirements, the implementation for safety standards, the management of ineligible containers and litter, and treatment and potential breakage of refillables (see Section 17 for further discussion).
Fraud risks and solutions, including fraud mitigation of double counting of containers, and costs associated with fraud management (see following sections for further discussion).	Clearly defining the payment methods to future-proof the scheme (see for further discussion).
A clear definition of 'collection point operators' that identifies those that can't be operators and identifying that collection point operators can operate multiple individual collection points (see Section 17 for further discussion).	Cost implications of the hub and spoke model, with respect to material value recovery (see Section 17 for further discussion).
Clear definitions of bulk material and the different market values, including the differences between colour separated clean glass, colour mixed clean glass and MRF glass, and the differences between crushed and broken glass (see Section 17 for further discussion).	The management of areas with high seasonal influx in population due to tourism (see Section 17 for further discussion).
The process for general waste and litter at unmanned and remote sites (see Section 17 for	Security considerations for customers and operators (see Section 17 for further discussion).

<b>Container Return Facilities Feedback – High Level Summary</b>	
further discussion).	
Management of unredeemed vouchers (see Section 17 for further discussion).	Ways to ensure that planning approvals and zoning do not restrict the expansion of the network (see Section 17 for further discussion).
The other contributing factors to return rates, such as high deposit rates, age of scheme, proximity to other collection points and local consumptions trends (see Section 17 for further discussion).	Strategy to promote scheme awareness and informing consumer behaviour, including with refillables (see Section 17 for further discussion).
The statutory declaration process (see Section 17 for further discussion).	Logistical challenges for retail premises with accommodating container return solutions within their footprint, losing retail parking space, and management of litter (see Section 5 for further discussion).
<b>Opposing Views</b>	
<p>The diversity of container return facilities:</p> <ul style="list-style-type: none"> <li>• Members support flexibility of options.</li> <li>• Members against noted that a diversity of options can lead to management complexity, confusion to customers and additional operational costs.</li> </ul>	
<b>Do not Support the Following</b>	
Councils to develop collection points, especially voluntary return-to-retailer points. Additionally, some members have stated that there are conflicts of interest with councils not wanting collection points in their area to diminish the kerbside/MRF network.	Fixed fees to be set by the Managing Agency. The Managing Agency should have flexibility to set different fees for materials to ensure price competitiveness and recognise market differences.
Sorting by brand.	Over-the-Counter return locations. Members state that uptake is unlikely due to health and safety concerns, onerous logistical requirements and little financial incentives.
<b>Support the Following</b>	
Targets and Key Performance Indicators (KPIs) with penalties for not reaching the targets. Suggested targets include targets for a high collection rate, collection point operators per area, carbon consumption, zero waste, scheme awareness and community employment.	Flexibility in defining collection types to allow the Managing Agency to bring in innovative collection return facilities in the future.
Contracts between Managing Agency and Collection Point Operators to include provisions for over/under payments, auditing, dispute	Materials to be sorted at source into each material type. Some members believe that sorting should be by material type and by colour, including for glass.

<b>Container Return Facilities Feedback – High Level Summary</b>	
resolution, contract terminations etc.	
Lids to be removed for quality and safety concerns.	A single scheme brand, even if collection return facilities will be operated by different entities.
Funds raised from sale of material to be used to support the scheme and offset its costs.	Baling of materials, however with consideration of fraud and the Managing Agency to authorise under what circumstances materials can be baled.
Ability to donate refunds to charities.	Indigenous procurement, including Para Kore to participate in remote Māori rural communities.
Supporting Aotearoa New Zealand’s existing and future community recycling network, and depots to create community employment and income opportunities.	Collection point operators to be audited by the Managing Agency or third-party auditors.
Managing Agency to have contractual relationships with transportation for scheme integrity.	Managing Agency to provide a single scheme-wide payment app/system.
<b>Additional Design Considerations</b>	
Collection return facilities to be managed through a focus on KPI outcomes rather than stipulated as a scheme requirement.	Exemptions to allow customers to return more than 100 containers per customer in situations such as Over-the-Counter facilities in between pop-up events.
Other forms of convenience such as drive through facilities, facilities that also recycle other goods, the ability to be paid later to avoid queues and donation point drop offs.	

## 4.11 Component(s) to be Included in the New Zealand Container Return Scheme Design

Taking the above key findings into account and acknowledging the comprehensive feedback received from the SDWG co-design process, the Project Team on balance are of the view that, for optimum scheme performance, including supporting consumer convenience and accessibility, a range of container return facilities will be included in the NZ CRS design. Additionally, and on balance, the original proposal to include a voluntary return-to-retail option underpinned by a mandatory approach has been modified to reflect and acknowledge SDWG feedback specifically relating to the complexities that this type of arrangement would cause to the retail sector. As such, the Project Team has recognised this feedback and has included a voluntary return-to-retail option with no mandatory requirements. This approach will require the scheme Managing Agency to have greater focus on achieving a win-win outcome with retailers.

The Project Team is also of the view that in addition to the inclusion of a range of container return facilities and container collection methodologies, the following components will be included in the NZ CRS design.

## Customer Interface

- Convenience
  - Sufficient container return facilities will be located across Aotearoa New Zealand at suitable locations to enable customers to redeem their containers in a secure and efficient manner with minimal transaction times and at the same time ensure the return facilities are cost-effective and financially viable. Based on learnings from overseas, feedback from the design process and the outputs from financial modelling it is proposed that the NZ CRS initially establish approximately 415 (i.e., a projected population of 5.213million as at 2023 and a ratio of 12,500 people per container return facility) registered container return facilities across Aotearoa New Zealand noting that each of the approximately 415 registered sites are anticipated to have informal drop-off points located to increase customer convenience and provide additional volumes of containers to improve financial viability. The NZ CRS Managing Agency will be required to monitor the performance of each geographical area such as containers returned as a proportion of what is available in the area and take appropriate action as required. This action would include working with container return facilities, establishing more return sites and increasing awareness. It is further recommended that no later than 9-months before the scheme commences a final review is undertaken by the regulatory authority to confirm if the establishment of approximately 415 container return facilities is still appropriate.
    - Ensuring sufficient access to collection points throughout Aotearoa New Zealand is important to ensure the NZ CRS provides a service to all New Zealanders regardless of where they reside (e.g., rural, urban, city) whilst also providing consumers a range of locations that they can access and use that compliments their day-to-day activities. At the same time, it is important that the collection point sites are financially viable and cost-effective.
  - A range of manual and automated container return facility types (e.g., RVM, manual collection depots, return-to-retail, community recycling network) and/or other means of collection (e.g., charity, marae or school collection) will be established to reflect the most appropriate collection solution that also factors in Aotearoa New Zealand's broad geography (e.g., rural, residential, central city areas).
    - A range of container return facility types is beneficial to Aotearoa New Zealand by providing consumers the option to choose how they would like to return their eligible containers, for example, through a self-service reverse vending machine through to direct person-to-person contact. Additionally, a range of facilities seeks to support, for example, wide scheme participation from a range of businesses, encourage business innovations and create employment opportunities.
  - Manual container return facilities. Note, these facilities may also provide for additional customer services (e.g., collection of other recyclable materials such as ineligible containers, paper and cardboard, scrap steel and household items for recycling) and additional product stewardship schemes such as tyres, e-waste, Agrecovery containers).
    - The reason why this approach is good for Aotearoa New Zealand is to support broader resource recovery initiatives and to help Aotearoa New Zealand transition to *ōhanga āmiomio* - circular economy. Further, providing for the additional above listed example customer services will provide consumers with an opportunity and pathway to return materials for recovery than what may have otherwise been disposed of to general refuse/ruapara - landfill.

- Container refund options must include cash, electronic funds transfer, supermarket voucher (including, for example, a 2-year expiration date) and donation. The scheme Managing Agency will be empowered to have flexibility to expand the range of refund options such as a scheme credit system, loyalty card and gift cards). Alternative refund options must be supported by robust information (e.g., consumer surveys) and in consultation with the scheme Governance Board and the Government department responsible with scheme oversight.
  - The reason why this is good for New Zealanders is to provide consumers with a range of options to receive the appropriate container refund amount rather than limiting these options.
- Accessibility
  - Container return facility operating times to include after-hours (e.g., remaining open after 5.00 pm) and weekends (noting container return facility opening times may be influenced by region specific consenting requirements, for example, noise control).
    - The benefit of this approach is to provide consumers with a range of times to enable customers to conveniently return and redeem their containers, for example, after normal work hours.
  - The Managing Agency will give effect to ensuring that container return facilities are located strategically to promote customer convenience (e.g., supermarkets, petrol stations, co-located with community recycling facilities) and access points (e.g., transportation routes).
    - The benefit of this approach is to provide consumers with a convenient service that individuals can easily interact with while supporting, for example, local businesses (e.g., supermarkets, retail stores).
  - Container return facilities must provide for safe access (e.g., ramps versus steps) to a wide range of customers.
    - The reason why this is good for Aotearoa New Zealand is to ensure that all consumers have the opportunity and ability to access and interact with the NZ CRS.
- Engagement
  - Container return facilities must provide customers with scheme information, for example, scheme updates, in line with the marketing and communication requirements as determined by the Managing Agency and in bi-lingual and multi-lingual options.
    - The reason why this is good for the NZ CRS and Aotearoa New Zealand is to apply a consistent style of messaging across all registered scheme container return facilities supporting clear and transparent messaging to consumers. It is acknowledged that container return facilities may from time to time need to update consumers quickly on matters such as technology breakdowns but that in all cases, any change to a service provided by a scheme registered container return facility must be immediately raised with the Managing Agency to then determine whether additional public notification, for example, via the scheme website must be undertaken.
  - The Managing Agency is required to give effect to ensuring and establishing consistent marketing of the container return facilities (e.g., marketing toolkit, standards) and scheme awareness.
    - The benefit of this approach to Aotearoa New Zealand is to ensure all scheme participants have a clear understanding of their role and responsibilities and have access to scheme information tailored to their specific role.



- Container return facilities must maintain records of eligible containers counted, refunds issued and/or undertake regular audits of collected materials to ensure scheme transparency.
  - The benefit of this is to ensure the scheme Managing Agency has complete visibility and transparency of the eligible containers moving throughout the scheme, as well as tracking scheme finances against eligible container count.
- The Managing Agency will be responsible for the procurement of scheme container return facilities, including the incorporation of social and indigenous procurement elements, (e.g., establishment of employment number targets for manual collection depots).
  - The reason why this approach is good for Aotearoa New Zealand is that the Managing Agency has the ability to manage all registered container return facilities under a consistent contractual arrangement setup which may include, for example, workplace employment targets.

### Container Return Facilities

- All container return facilities must be registered with the Managing Agency.
  - The benefit of this approach is primarily driven by the Managing Agency's ability to track registered scheme containers and scheme participants to minimise scheme fraud and maximise scheme compliance. Additionally, registration of container return facilities will enable the Managing Agency to provide the consumer with a consistent service managed, for example, through consistent branding and scheme messaging.
- The Managing Agency will be responsible for ensuring best practice design guidelines are established for all container return facilities, including health and safety, operating and environmental management principles.
  - The benefit of this approach for the NZ CRS and New Zealanders is to set the minimum requirements to be met by a container return facility, including construction requirements, scheme branding and messaging, to support the establishment of a scheme that provides a customer focussed experience and maximising scheme efficiencies.
- The NZ CRS design requires container return facilities to accept a minimum of two (2) streams of material (e.g., glass and other) followed by (if required) additional sorting technology at the container return facility or at another scheme location to ensure separation of materials into respective product/material types (i.e., glass colour separation, separation of plastics by type [e.g., PET, HDPE], liquid paperboard, aluminium/steel).
  - The reason for this approach is driven primarily to drive scheme efficacy and make the most of technology and transport logistics. The final number of minimum sorts will be confirmed during the NZ CRS implementation stage and will balance scheme financials with scheme efficiencies.
- Manual Container Return Facilities
  - Manual Collection Depot
    - Collection depots will cater for immediate counting and provision of customer refunds as stipulated by the Managing Agency (including cash, electronic funds transfer, supermarket voucher [including an appropriate expiration date], donation, scheme credit system, loyalty card, gift card) for eligible containers.
      - The benefit of this approach is that the depot can count and verify scheme eligible material returned by consumers and then refund the appropriate amount immediately with no time delay to the consumer.

- Written container declarations to be completed by customers for containers over 1,500 containers (i.e., fraud prevention measures on stolen containers and in alignment with Australian schemes).
  - The benefit of this approach is to ensure that all scheme participants involved in the bulk collection of eligible scheme containers are registered within the scheme so that the scheme Managing Agency can manage, monitor and track collection activities and the numbers of containers being returned and deposits refunded through the scheme. Additionally, capping the number of eligible containers returned at any point in time influences tax avoidance by non-scheme registered individuals. The cap will be set at 1,500 containers for a cash deposit refund in alignment with the New South Wales, Queensland and Northern Territory container return schemes in Australia and subject to any specific Aotearoa New Zealand tax laws and scheme measures such as fraud mitigation and reporting requirements. Additionally, the option to include additional container cap numbers for specific container return facilities, for example, retail, will be considered during the NZ CRS implementation stage.
- The maximum container return amount will be determined during the implementation phase for each type of container return facility (Manual Depot, Automated Depot and Return to Retail) and will balance container return efficiency and impact on existing business activities, particularly when considering return to retail points with limited storage capacity compared to a manual depot. Return to retail points will require site by site consideration to ensure that retail activities are not unduly disrupted by container return activities particularly when the return point is inside the retail operation, for example, inside a supermarket.
  - The benefit of this approach to the NZ CRS is ensuring that container return facilities are not unduly disrupted by container return activities.
- Manual collection depot will have the option to refuse to accept a customer's containers where containers do not meet the container acceptance criteria as specified by the Managing Agency and included in the NZ CRS legislative instrument, including but not limited to:
  - Unclean or contaminated;
  - The refund marking is illegible or not visible;
  - Not labelled according to the NZ CRS scheme (e.g., were not sold in Aotearoa New Zealand); or
  - If a person refuses to complete a declaration when asked to do so by the depot operator.
    - The benefit of this approach is to ensure that returned containers meet the scheme acceptance criteria in order to be eligible for the appropriate refund amount. Additionally, the acceptance criteria are a means for the scheme to monitor and manage fraudulent activities and supporting the collection of clean material for re-processing.
- The Managing Agency will give effect to establishing clear processes, guidance for procuring and establishing container return facilities and Material Consolidation Facilities (see Section 7 for further discussion).

- The reason this is good for the NZ CRS is to acknowledge container return facilities located in regional/remote areas of Aotearoa New Zealand where the cost of transporting unbaled scheme containers may prove to be financially inefficient.
  - Over-the-Counter Facility
    - The Managing Agency will give effect to promoting and encouraging the establishment of Over-the-Counter return locations in areas where other return facilities are not suitable, including but not limited to the following limitations:
      - Over-the-Counter returns limited to accepting small quantities (e.g., less than 100 eligible containers per customer).
      - Limit customer refund options to cash only or voucher for use in store.
      - Over-the-Counter conditions set by the Managing Agency (e.g., store location, minimum sales area, storage capacity, store security).
        - Incorporating an over-the-counter container return facility option into the NZ CRS will assist in providing consumers with an additional option to return containers to, while, for example, also supporting small communities in rural and/or remote locations to provide a convenient local service to their resident base.
  - Container Bag-Drop Facility
    - Bag-drop facilities will be included alongside a manual collection depot for customer convenience (i.e., service for those customers unable to wait for containers to be counted).
      - Providing a range of convenient return options to consumers is an important element in providing a scheme that is consumer focussed as the service will enable consumers that, for example, have limited time, to drop-off their containers to be counted, verified and refunded at a later time.
    - Bag-drop facilities will be required to supply specific bags (e.g., linked to registered collection depot, bag ID to track container transaction) for customers to collect and return eligible containers.
      - Providing bags with pre-labelled details will mean consumers have a dedicated collection method with the ability to track the progress of their transaction, including, for example, when their refund may be deposited into their selected account.
    - The Managing Agency will give effect to promoting and encouraging the provision for mobile and/or pop-up return facilities (e.g., events, service provision for Universities, schools, etc) to increase container recovery.
      - Mobile and/or pop-up facilities will assist in providing localised services to areas where, for example, consumers may not have the ability and/or means to travel to another facility for a direct container count and refund or provide a bespoke collection service to activities that may require this.
    - The Managing Agency will give effect to promoting and encouraging the unmanned mobile or pop-up facilities to offer the option of electronic funds transfer, or transfer of scheme credits to loyalty schemes or other options as appropriate. No cash to be provided.
      - The benefit of this option is to provide consumers with another option with which to return their eligible containers whilst supporting the

Managing Agency to reduce, for example, theft of cash from unmanned facilities whilst still providing a convenient service to the consumer.

- Automated Container Return Facilities
  - Reverse Vending Machine
    - The Managing Agency will give effect to actively promoting the location of reverse vending machines to be connected to areas of customer convenience, for example:
      - Public transport facilities, bus inter changes, ferry terminals.
      - Education establishments including universities and schools.
      - Marae and Resource Recovery Centres.
      - Parks and nature reserves, barbecue areas.
      - Retail premises such as supermarkets, shopping malls, wholesale retailers.
      - Retail parking lots, major multi-storey parking lots.
      - Standalone (e.g., carparks) and/or inbuilt machines to accept eligible containers.
      - Acceptance of eligible containers by type (i.e., glass, plastic, aluminium/tin).
      - Machines to be of various sizes to cater to retail store specifications.
      - Consideration given to material compression and relationship to scheme fraud prevention measures.
      - Machines to provide marketing opportunities where sited (e.g., retail location, schools, local council main office).
        - The benefit of providing RVMs in a range of locations is primarily to provide the consumer with convenient options with which to return their eligible containers for the appropriate refund.
    - Containers will be accepted based on barcode scanning, materials or shapes, scheme logo, security logo (Note: eligible container acceptance connected to quality of container, fraud prevention measures and if a machine has the facility to compress containers). Minimum acceptance criteria will be determined during the implementation stage and will take advantage of new developments or innovations in technology to identify eligible containers.
      - The benefit of this approach is primarily driven by the Managing Agency's ability to track registered scheme containers and participants to minimise scheme fraud and maximise scheme compliance.
    - The Managing Agency will, through contractual arrangements with container return facilities, give effect to ensuring that machines accepting both eligible and ineligible containers does not result in potential littering of rejected containers (NOTE: consideration must be given to potential misuse of machine as an alternative means of disposal).
      - The benefit of this approach is primarily driven to maximise consumer convenience whilst minimising the likelihood of litter disposal of those ineligible containers particularly where container return facilities are unmanned (e.g., mobile and/or pop-up facilities).
    - The Managing Agency will give effect to promoting and provide for container return facilities focussed on donations only at locations such as bus/train/ferry stations, council main offices, zoos.

- The benefit of this approach is primarily driven to maximise consumer convenience for those consumers who may wish to simply return containers with the appropriate refund to be allocated to a specific charity(ies) as supported by the facility (e.g., a RVM placed at a zoo with refunds to support zoo wildlife initiatives).
    - The Managing Agency will, during the implementation phase, give effect to stipulating a maximum container limit for automated depots.
      - The reason why this is good for the NZ CRS and Aotearoa New Zealand is to provide additional infrastructure to manage large quantities of eligible containers that the container return facilities may otherwise not have the capacity to manage.
    - The maximum container return amount will be determined during the implementation phase for each type of container return point (Manual Depot, Automated Depot and Return to Retail) and will balance container return efficiency and impact on existing business activities, particularly when considering return to retail points with limited storage capacity compared to a manual depot. Return to retail points will require site by site consideration to ensure that retail activities are not unduly disrupted by container return activities particularly when the return point is inside the retail operation, for example, inside a supermarket.
      - The benefit of this approach to the NZ CRS is ensuring that container return facilities are not unduly disrupted by container return activities.
  - Return-to-retail is based on voluntary participation by retailers. For completeness this also applies to rural Aotearoa New Zealand.
    - The reason why this is good for Aotearoa New Zealand is that the current network of retail locations (e.g., supermarkets) provides consumers with a convenient number and choice of locations which may compliment day-to-day activities such as shopping, meaning eligible scheme containers can be returned at the same time. Under a voluntary approach it is for the Managing Agency to ensure the arrangements with retailers to host a collection site represents a win-win outcome.
- Transportation of Material
  - The Managing Agency will be responsible for managing the establishment of collection service contracts (e.g., contracted back-haul arrangements) to deliver the service needed to transport eligible scheme containers from the container return facility to the scheme Material Consolidation Facility.
    - The establishment of transportation service contracts will ensure that the NZ CRS benefits from a consistent service ensuring that eligible containers are moved efficiently between scheme participants.
  - The Managing Agency will be responsible for ensuring the utilisation of appropriate transportation logistics providers and/or back-haul arrangements are cost-effective and efficient and reduce the carbon footprint, including for remote/regional areas.
    - The benefit of this approach to Aotearoa New Zealand is to support Aotearoa New Zealand's goal to reduce greenhouse gas emissions and progress Aotearoa New Zealand's obligations under the Kyoto Protocol. The added benefit is to utilise existing infrastructure to support scheme activities whilst encouraging scheme employment.
- The Managing Agency shall give effect to the following (these points should be specific to the container return facility only):

- The establishment of appropriate fraud mitigation processes and procedures to manage and track the flow of eligible containers through the scheme (i.e., container return facilities, transportation to material processing facilities, transportation to re-processors and/or direct to end-markets).
  - The benefit of this is to ensure the scheme Managing Agency has complete visibility and transparency of the eligible containers moving throughout the scheme, as well as tracking scheme finances against eligible container count.
- The Managing Agency may approve **baling** of scheme material (e.g., plastic, aluminium) on a case by case basis at selected container return facilities where it is demonstrated that these facilities would contribute to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. To achieve this, the Managing Agency will establish a scheme baling and audit process based on robust standards and procedures, including, for example, a contractual 'Baling Services Agreement' between the Managing Agency and the container return facility. This agreement will be supported by robust standards and procedures such as Standard Operating Procedures that the container return facility must contractually abide by. Additionally, the baling process will be standardised across the scheme so that the same baling process (i.e., weight and size of bale) is used at the container return facility and the scheme MCF ensuring consistency of methodology and minimisation of fraud.
  - The benefit presented by baling at container return facilities is the ability for the Managing Agency to use existing infrastructure whilst contractually managing the expansion of the facility's role and responsibility. Additionally, this approach will support the establishment of regional/remote Aotearoa New Zealand collection facilities to also bale and transport material to end-markets under contract with the Managing Agency, thereby improving scheme efficiencies such as transportation of loose material (i.e., payload efficiencies). Further, the Managing Agency is best placed to establish and manage the 'Baling Services Agreement' and the supporting Standard Operating Procedures in order to track scheme material and minimise fraud.
- The Managing Agency will also approve **compaction** of scheme material (e.g., plastic, aluminium) at selected container return facilities where it is demonstrated that these facilities would contribute to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. To achieve this, the Managing Agency will determine the optimised compaction ratio that enables the scheme MCF to re-count and verify eligible scheme containers.
  - The benefit of this approach is the ability of regional/remote Aotearoa New Zealand collection facilities to reduce costs associated with transporting materials to the scheme MCF. Further, the Managing Agency is best placed to manage setting compaction ratios in order to track eligible containers and minimise fraud.
- The Managing Agency will give effect to setting of an appropriate handling fee including reviews of the handling fee at intervals to ensure the viability of collection depots and scheme performance.
  - The reason why this is beneficial for Aotearoa New Zealand is primarily for the Managing Agency to compensate those scheme participants responsible for handling and sorting eligible containers and ensure that their respective activities remain profitable to ensure service continuation.
- All scheme material sold to markets will be owned by the Managing Agency.
  - The reason why this is good for Aotearoa New Zealand is that the Managing Agency is in the best position to manage this risk and promote the beneficial

- use of material over the long term. This is beneficial for the New Zealand taiao - environment as it will encourage the supply of scheme materials to Aotearoa New Zealand based manufacturers. The Managing Agency may, for example, enter long-term supply arrangement with material re-processors that results in certainty of supply to enable and assist investment in infrastructure.
- Revenue generated by the sale of eligible scheme material to be passed on via the Advanced Material Recycling Fee to beverage producers to reflect the choice of container materials used.
    - The reason why this is good for Aotearoa New Zealand is that the Managing Agency is in the best position to manage the risk and promote the beneficial use of material over the long term as well as share the benefit of this with both beverage producers and consumers. This is beneficial for the Aotearoa New Zealand taiao - environment as it will encourage the reuse of scheme materials with a priority focus on Aotearoa New Zealand based manufacturers.
  - The Managing Agency will be responsible, through contractual arrangements, for ensuring container return facilities report key scheme performance data in keeping with scheme reporting requirements (see Section 16).
    - The benefit of this requirement to Aotearoa New Zealand is to ensure the container return facility provides to the Managing Agency clear and transparent information on the efficiency and performance of the scheme whilst highlighting areas of improvement.
  - The Managing Agency is responsible for the integration of a separate financial accounting system and Information and Communications Technology (ICT) platform to manage scheme costs.
    - The benefit of this approach for a NZ CRS is to enable the Managing Agency to have complete transparency and visibility of containers received, processed, transported and the value of deposits issued to consumers as they relate to the successful functioning and performance of the scheme.





## SECTION 5: THE RETAILER

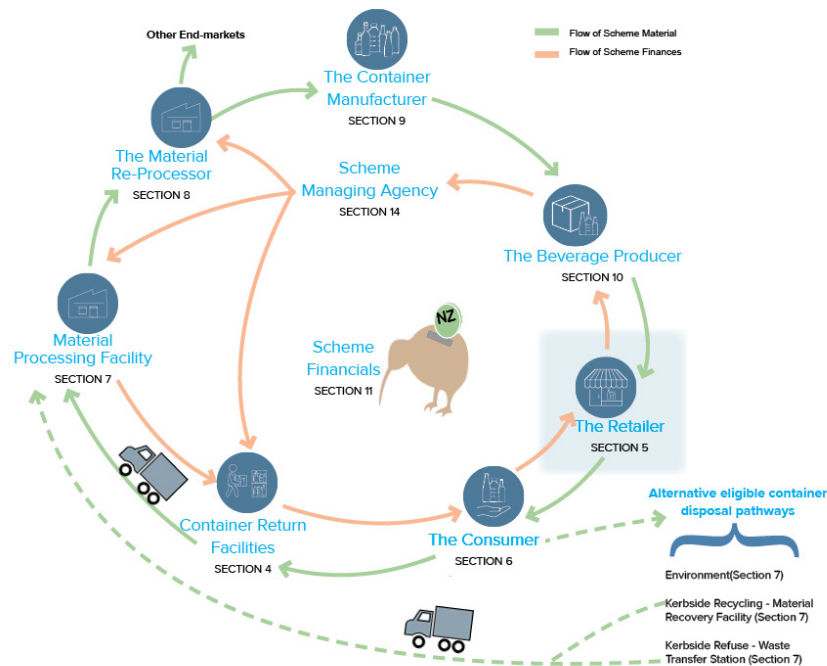
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## Section 5 The Retailer

Retailers play a large role in the operation of existing schemes. As illustrated in the below schematic, retailers are both the point of access for the sale of eligible containers and at times for the collection of containers and refunding of deposits.



Commonly, all retailers operating under a scheme have the obligation to only sell eligible scheme containers, however not all have the obligation to act as container return facilities. The return-to-retail system is discussed further in Section 4.1.2.2.

In Australia, increased container costs are passed on to retailers from the beverage suppliers. Retailers then pass the increased costs to consumers by adding it to the total cost of the beverages. Participating retailers refund the deposit amount back to consumers who return eligible empty containers. Different states specify the form of refund that can be returned to customers. For example, in South Australia, the refund must be provided in the form of cash only. In New South Wales, participating retailers can operate manual collections points or have Reverse Vending Machines (RVMs) that provide the additional option of credit to be used towards shopping bills in store. Other than a change in logistics, retailers are impacted by the scheme in varying ways. The impacts that schemes have on retailers are discussed in Section 5.1.

*Retailers are both the point of access for the sale of eligible containers and at times for the collection and refunding of containers. Commonly, all retailers operating under a scheme have the obligation to only sell eligible scheme containers, however not all have the obligation to act as collection and refund points*

Australia does not currently have a scheme with a return-to-retail obligation instead in most cases, the system is a voluntary option for retailers (see Section 4.1.2.2 for further information). Countries or regions that enforce the return-to-retail system include Saskatchewan, Germany, Massachusetts, Michigan, Oregon and Vermont. Some countries like Lithuania have a size threshold for the retailers that

need to act as collection points or as occurs in Vermont, exempt retailers from participating if they are located near a major collection and refund point.<sup>246</sup>

According to a 2018 study on several schemes around the world, schemes that have a return-to-retail obligation tend to have higher container redemption rates<sup>247</sup> (see Section 4.1.2.2 for further information). Examples of this include the schemes in British Columbia, Germany and Michigan. The study estimates that the redemption rates are higher by about 10-15 %. Reasons for their success include the greater accessibility, convenience and numbers of collection and refund points. The study also suggests that schemes with return-to-retail obligations can be simpler to set up as the task of selecting locations for redemption points is not required.

The study however also points out disadvantages to the obligatory return-to-retail system. Having a high redemption rate can impact on Material Recovery Facilities (MRFs) and kerbside collection systems and having a large number of refund points can mean less cost effectiveness in terms of cents per collected container. A larger number of collection points means less containers going through each collection point. Additionally, refund points are required to be made fit for purpose to suit the logistics of different retailers. From Aotearoa New Zealand's perspective some of what are seen as disadvantages would arguably be a positive with respect to diverting more material away from kerbside and at the same time lifting quality. Increasing the number of container return facilities does impact on financial viability which, as covered in Section 11 (Scheme Financials), can be mitigated by increasing the scheme fee.

## 5.1 Deposit Impact

Several studies have been undertaken to assess the impacts of existing schemes on the retail industry with the outcome of these studies summarised in the following bullet list with each discussed in more detail in Section 5.1.1 to Section 5.1.7:

- Changes in foot traffic;
- Changes in retailer sales;
- Impact on the cost of products sold;
- Additional costs on retailers;
- Site logistic requirements;
- Modification requirements to the retailer; and
- Impacts on health and safety

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*RVMs (in comparison to manual collections) are perceived by retailers as a benefit to their sales as they provide refunds in the form of vouchers or cash and encourage customers to enter the retail store and purchase new goods. Negative perceptions of manual collections were reported to be related to the slowing down of customer service for shoppers while staff are counting, scanning, sorting and refunding empty containers. Retailers have hence often volunteered to operate RVMs to encourage their sales in addition to appearing more environmentally conscious to their shoppers*

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### 5.1.1 Foot Traffic

The impact that schemes have on the retail industry appears to be primarily positive due to increased foot traffic with evidence of this reported in Quebec, Lithuania and New York.

As retailers operating in a province with a mandatory return-to-retail system, retailers in Quebec are said to be very satisfied with the system as it has provided additional convenience to their customers and consequently ensured return traffic to their stores<sup>248</sup>. Similarly, in Lithuania, retailers in general are said to be happy with the scheme as it has meant that people are encouraged to return to their stores to return their empty containers. Additionally, in Lithuania, the option of accepting credit towards a

<sup>246</sup> Marsden Jacob Associates, 2018, A Model Framework for Container Refund Scheme in Tasmania.

<sup>247</sup> Marsden Jacob Associates, 2018, A Model Framework for Container Refund Scheme in Tasmania.

<sup>248</sup> Container Recycling Institute, Québec, Available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/canada/quebec>

shopping bill as a refund method for the deposit is found to encourage additional foot traffic to the stores<sup>249</sup>.

In 2013, a survey was undertaken in New York on 1,100 people who returned beverage containers, to assess the scheme's impact on New York's retailers. The survey found that 68% of those surveyed are undertaking shopping when they are returning their containers and 81% have become repeat customers at the stores where they returned their containers. Fifty-seven percent (57%) of those surveyed chose to undertake their shopping at particular stores because of the store's convenient beverage collection system<sup>250</sup>.

Based on a review undertaken in 2008 on the existing schemes globally, it has been found that in Germany the general pattern at the beginning of the scheme's implementation was that the majority of empty containers were returned by consumers to retail outlets (approximately 80%) with only 20% returned via RVMs. After approximately 5 to 6 years of the German scheme's operation, the pattern changed with the majority being returned to RVMs (approximately 80%) and 20% to retail outlets<sup>251</sup>.

## 5.1.2 Retailer Sales

Based on the review of global schemes undertaken in 2008, RVMs (in comparison to manual collections) are perceived by retailers as a benefit to their sales as they provide refunds in the form of vouchers or cash and encourage customers to enter the retail store and purchase new goods. Negative perceptions of manual collections were reported to be related to the slowing down of customer service for shoppers while staff are counting, scanning, sorting and refunding deposits associated with the return of empty containers. Retailers have hence often volunteered to operate RVMs to encourage their sales in addition to appearing more environmentally conscious to their shoppers<sup>252</sup>.

Section 5.1.2.1 and Section 5.1.2.2 provide case study examples summarising the impacts of container deposit schemes on retailers in New South Wales and Queensland, and the United States of America. Additionally, Section 5.1.2.3 provides a summarised European case study example of the impacts of schemes on European retailers.

### 5.1.2.1 Australia

During the first year of operation of the schemes in New South Wales and Queensland, two separate inquiries were undertaken to understand the schemes' impacts on the retail industry. The impacts at the beginning of the scheme on retailer sales in New South Wales were discussed in the report<sup>253</sup> and are listed below:

- The assessment found there are indications of negative impacts for retailers located close to state borders. Some retailers quoted that they have lost more than 30% of their retail sales. The retailers located close to the Victorian border appeared most impacted as Victoria does not have its own container refund scheme at present;
- Anecdotally, it has been indicated that some retailers along the state borders matched the product prices from across the border in order to avoid losing product sales. For smaller retailers, this response to pricing differentials can lead to significant losses in profitability;

<sup>249</sup> Open Access Government, 2018, Recycling: Lithuanian deposit system exceeds all expectations, Available from: <https://www.openaccessgovernment.org/recycling-lithuania-deposit-system-exceeds-all-expectations/45003/>

<sup>250</sup> CM Consulting, 2018, In Our Opinion: Why Deposits Make Sense for Retailers, available from: <https://www.cmconsultinginc.com/2018/09/in-our-opinion-why-deposits-make-sense-for-retailers/>

<sup>251</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>252</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>253</sup> NSW Business Chamber, 2018, NSW Container Deposit Scheme: Monitoring the impacts on container beverage prices and competition.

- Price increases were mostly felt and seen by consumers when buying containers in bulk. As such, retailers were said to experience a loss of consumers buying in bulk and alternatively shopping for large quantities across state borders;
- Where convenience was highly valued, particularly in regional areas along the border, retailers did not experience a dramatic loss; and
- Many retailers on the contrary felt that participation in the system helped with avoiding loss of business.

The impacts at the beginning of the scheme on retailer sales in Queensland, taken from the interim report<sup>254</sup> released during the first year of operation of the scheme, are listed below:

- It was estimated that consumption of non-alcoholic beverages had decreased by an approximate average of 6.3% or 1.01L per household per month. It was also estimated that due to the scheme, expenditure per household had increased by AUD\$0.97, or 4.5% per household per month for non-alcoholic drinks. It was noted that data taken from small retailers was not as reliable as that of larger retailers due to the lack of data recording and the short-term operation of the scheme;
- The general reduction of household consumption was attributed to the decrease of purchasing of multipack beverages, such as cartons of 24 beverages; and
- The assessment suggested that consumers in regional Queensland were less willing to change consumption habits of soft drinks and absorbed the higher prices. Consumers in Brisbane reduced their consumption for soft drinks in response to the higher fees.

### 5.1.2.2 United States of America

In 2006, a report<sup>255</sup> was released assessing the financial impacts of the scheme on the state of Vermont in the United States of America. The cost implications of the scheme on Vermont's beverage retail sales taken from the report and listed below show the impact on Vermont's retailers from the container deposit scheme:

- In 2006, it was stated that the bottle deposit law, along with other policies implemented by the government, contributed to Vermont's beverage retail sales to reduce in comparison to other states. The retail sales per capita in Vermont were 28% lower than in New Hampshire. The scheme was noted as not the only cause for the decrease in beverage retail sales, however it had contributed to the problem, and had led to retailers moving their businesses elsewhere;
- Of all the retail stores, food and beverage stores were most affected by Vermont's scheme. The retail sales of the food and beverage stores were 40% lower in Vermont than in New Hampshire; and
- According to the 2002 Census data, when looking at the border between Vermont and New Hampshire, the average food retailer along New Hampshire's border had twice the sales of the average food retailer along Vermont's border.

### 5.1.2.3 Europe

In Europe, the most common issue in relation to retailer sales appeared to be that sales along country borders were negatively impacted by the way schemes differed in neighbouring countries. It was reported in 2011 that in Denmark, beer cans and soft drinks were imported from Germany rather than purchased in Denmark. Danish citizens did not have to pay for the German deposit on the beverages bought in Germany. They also did not receive a refund in Denmark for the German beverages, so the

<sup>254</sup> Queensland Productivity Commission, 2019, Interim Report - Container Refund Scheme, Price Monitoring Review.

<sup>255</sup> Northbridge Environmental Management Consultants, 2006, Analysis of Vermont's Bottle Bill: Costs, Impacts and Expansion

containers were not recycled<sup>256</sup>. Danish retailers have previously lobbied their government to implement policies so that Danish consumers were required to pay the German deposit if beverages are bought in Germany<sup>257</sup>. Similar issues were found in Sweden, Norway and Finland due to the varying scheme designs. Beer cans were imported from Germany and Denmark rather than purchased in Sweden, imported from Sweden rather than purchased in Norway, and imported from Sweden and Estonia rather than purchased in Finland<sup>258</sup>, indicating border control is an important aspect in the design of any scheme.

In Germany, when the scheme was first announced, the retail industry lobbied against the scheme as it was believed that the scheme would negatively impact their business<sup>259</sup>. The scheme has in fact been reported to have had a negative impact on the sales of reusable packaging whereby the scheme's design has resulted in large retailers such as Aldi and Lidl switching exclusively to single-use bottles made from PET to streamline the return-to-retail process. PET bottles were able to be returned to retailers other than where they were bought, unlike glass which had to be returned where it was purchased<sup>260</sup>. Due to the scheme's impact, it was reported in 2013 that the market share of reusable containers dropped below 50%<sup>261</sup>. Additionally, the scheme's design in Germany meant that retailers could only take back the same types of containers sold in store, which led to some retailers stopping the sale of particular types of containers. Similarly, to avoid paying for clearing systems for new eligible containers, discontinued them from their stock<sup>262</sup>.

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*The impact that schemes have had on the cost of products are reported to also impact changes in customer behaviour and retailer sales.*

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In comparison, Lithuanian retailers have been positive about their retail sales because of the scheme. Because of the benefits to its business, a large supermarket chain installed almost 200 RVMs across its stores. The chain found that customers were coming back to return their empty containers and consequently buying more products from their stores<sup>263</sup>.

It is important to note that the reported feedback from Australia, Vermont and Europe was predominantly based on cross border issues where neighbouring border countries and/or states had either a different scheme design or no scheme in place. It is the intent to design a national container return scheme for Aotearoa New Zealand which will remove any issues associated with in-country regional borders. However, it is acknowledged that matters associated with the importation of containers from other countries and/or schemes will need to be addressed in the design process.

### 5.1.3 Costs of Products Sold

The impact that schemes have had on the cost of products are reported to also influence changes in customer behaviour and retailer sales. Information on the changes in costs of products has been found in the inquiries undertaken in New South Wales and Queensland during the schemes first year of

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<sup>256</sup> Directorate General for External Policies of the Union - Policy Department, 2011, A European Refunding Scheme For Drinks Containers.

<sup>257</sup> Martin Stewardship & Management Strategies Pty Ltd, 2011, Preliminary Report - Best Practice International Packaging Approaches.

<sup>258</sup> Directorate General for External Policies of the Union - Policy Department, 2011, A European Refunding Scheme For Drinks Containers.

<sup>259</sup> Deutsche Welle, 2013, German consumers kick the can, available from: <https://www.dw.com/en/german-consumers-kick-the-can/a-16604691-0>

<sup>260</sup> Guardian News & Media Limited, 2018, Has Germany hit the jackpot of recycling? The jury's still out, available from: <https://www.theguardian.com/world/2018/mar/30/has-germany-hit-the-jackpot-of-recycling-the-jurys-still-out>

<sup>261</sup> Deutsche Welle, 2013, German consumers kick the can, available from: <https://www.dw.com/en/german-consumers-kick-the-can/a-16604691-0>

<sup>262</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>263</sup> Open Access Government, 2018, Recycling: Lithuanian deposit system exceeds all expectations, Available from: <https://www.openaccessgovernment.org/recycling-lithuania-deposit-system-exceeds-all-expectations/45003/>

operation. This information is listed below, keeping in mind that these results were found during one (1) year of the operation of the schemes.

It was found in New South Wales that retailers were reportedly reluctant to dramatically increase the prices of their products to reflect the cost of the container return scheme in case it led to a change in customer purchasing habits, affecting not only the sales of beverages covered by the scheme, but also other products purchased at the store at the same time. There were indications that some of the larger liquor retailers retained the same prices as those before the implementation of the scheme in order to encourage competition. This was attributed to their ability to negotiate better discounts from suppliers and maintain lower or negative margins for longer periods, in comparison to smaller retailers<sup>264</sup>.

In Queensland, the container return scheme was reported by the Queensland Productivity Commission to increase the price of non-alcoholic beverages in eligible containers by an estimated AUD9.0-cents (5.1%) on average since the scheme's introduction. The cost of fruit juices, water and flavoured milk increased by less than the average increase, while soft drink prices were reported slightly above the average (Table 10).

**Table 10: Estimated impact of the Queensland container return scheme on prices of non-alcoholic beverages in the schemes first year (\* 1% significance)<sup>265</sup>**

	Soft drinks	Water	Flavoured milk (small container)	Fruit juices	Total
Estimated impact (cents per container)	10.3*	8.0*	8.9*	3.8*	<b>9.0*</b>
Standard error	0.59	0.81	1.43	1.35	<b>0.47</b>
Implied percentage change (%)	8.0	5.1	4.2	1.4	<b>5.1</b>

Unlike non-alcoholic beverages, limited data was available for alcoholic beverages resulting in greater modelling sensitivity. As such, the reported increase of AUD9.9-cents per eligible container should be treated with caution.

Further, it was found that the price increases for alcoholic and non-alcoholic beverages were similar for small and large retailers and similar for Brisbane and regional Queensland. Alcoholic beverages were estimated to have increased by AUD\$0.069 per container at large retailers and AUD\$0.104 per container at small retailers. Non-alcoholic beverages were estimated to have increased by AUD\$0.95 per container at large retailers<sup>266</sup>. The final 2020 report issued by the Queensland Productivity Commission reconfirmed that the price increases due to the container return scheme may have differed between small and large retailers but that the difference was not statistically significant (Table 11).

<sup>264</sup> NSW Business Chamber, 2018, NSW Container Deposit Scheme: Monitoring the impacts on container beverage prices and competition.

<sup>265</sup> Container Refund Scheme Price Monitoring Review: Final Report 2020

<sup>266</sup> Queensland Productivity Commission, 2019, Interim Report - Container Refund Scheme, Price Monitoring Review.



**Table 11: Queensland container scheme costs, from 01 November 2018<sup>267</sup>**

Beverage	Large retailer Price impact (AUDcents per container)	Standard error	Small retailer Price impact (AUDcents per container)	Standard error	Statistically different from each other (Yes/No)
Non- alcoholic	9.0*	0.46	~0.0	7.84	No
Alcoholic	6.9*	1.67	10.4*	0.89	No

\* 1% significance. No asterisks indicate that the estimate is not statistically significant.

Additionally, the price impact of the scheme on multi-packs was estimated by the Queensland Productivity Commission where the retail prices per litre of beverage sold in multi-packs was greater than compared with other beverages. The report gave the following example:

- If the retail price per container rose in line with the AUD10-cent refund amount, a 10-pack of 375mL soft drink cans would have AUD\$1 added to its purchase price. In contrast, consumers who buy roughly equivalent volume in two bottles of 2L each would only pay AUD20-cents more.

The following table illustrates the estimated impact of the Queensland container return scheme on prices of non-alcoholic beverages sold in multi-packs during the scheme's first year of operation.

**Table 12: Estimated impact of the Queensland container return scheme on prices of non-alcoholic beverages sold in multi-packs during the scheme's first year of operation (\*1% significance)<sup>268</sup>**

Multi-pack size	Soft drinks (price change AUDcents per container)	Soft drinks (implied percentage change, %)	Water (price change AUDcents per container)	Water (implied percentage change, %)
2-9 containers	10.2*	10.3	9.9*	11.2
10-24 containers	10.2*	18.1	9.4*	33.3
25-40 containers	10.7*	18.2	11.4*	50.9

Unfortunately, the report was unable to provide reliable estimates of price increases for alcoholic beverages sold in multi-packs due to insufficient data. Additionally, the Queensland Productivity Commission reported that while estimates suggested that price increases due to the scheme may have differed between small and large retailers, this difference was in fact not statistically significant<sup>269</sup>.

## 5.1.4 Cost on Retailers

The costs incurred by retailers due to the operation of the schemes differed based on the designs of the schemes. This information has been found in Australia, United States of America and Europe and is outlined below.

### 5.1.4.1 Australia

Based on the first year's operation of the New South Wales scheme, the inquiry report noted that the typical costs of the scheme on retailers included costs associated with:

<sup>267</sup> Container Refund Scheme Price Monitoring Review: Final Report 2020

<sup>268</sup> Container Refund Scheme Price Monitoring Review: Final Report 2020

<sup>269</sup> Container Refund Scheme Price Monitoring Review: Final Report 2020

- Lodging information and remitting payments to the Scheme Coordinator;
- Time and effort to find information and understand obligations under the scheme, including payments for professional advice;
- Adjusting internal system and procedures to ensure compliance;
- Changing product prices;
- Negotiating contract changes; and
- Consumer education.

Feedback from New South Wales retailers indicated that significant cashflow impacts were created in the times between when the deposit refunds were given to consumers and when retailers were reimbursed<sup>270</sup>.

#### 5.1.4.2 United States of America

In the United States of America in general, costs for retailers were found to include costs associated with:

- Rent and allocation of space for the collection systems and activities;
- Investment in equipment and supplies;
- Utilities and insurance;
- Costs for leasing and maintaining RVMs; and
- Daily operation and labour for handling and sorting containers.

Where manual collection of beverages was undertaken, 76% of the retailer's costs were associated with labour costs. The average cost for a retailer using RVMs in 2005 was estimated to be USD\$0.0253 per container, while the average cost of manual handling was estimated to be USD\$0.0407 per container<sup>271</sup>.

In Vermont, retailers were charged by distributors the handling fee and the USD5-cent deposit for each container. The retailer then passed on the USD5-cent deposit fee to the consumer. The financial impact assessment of Vermont's scheme undertaken in 2006 found that, while increased costs on retailers were thought to be passed on to the consumers directly through the scheme, they were often in fact passed along by increasing the prices placed on other products in the retail stores, not just on beverages. It was also stated that the average cost for retailers for handling empty non-carbonated containers was higher than the cost to handle carbonated containers due to the increased sorting, space and labour requirements to accept, sort and count containers<sup>272</sup>. Retailers in Vermont were required to sort the collected empty containers by brand, distributor and container type. Retailers were then required to organise for a pick-up of the sorted containers. After verification of the number of containers, the retailers were paid back the USD5-cent deposit and the handling fee per container.

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*New South Wales that retailers were reluctant to dramatically increase the prices of their products in case it led to a change in customer habits, affecting not only the sales of beverages covered by the scheme, but also other products purchased at the store at the same time*

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The 2006 study further surveyed seven large food retailers who operated 55 stores in Vermont. Handling costs for the use of the RVMs included costs for lease, throughput, labour and maintenance such as pest control, utilities, etc. Handling costs for manual container return facilities included space, operation and maintenance and labour. Based on the survey, the average cost for large retailers was USD\$0.087 per container. Throughput was found to be one of the largest factors that affected costs for

<sup>270</sup> NSW Business Chamber, 2018, NSW Container Deposit Scheme: Monitoring the impacts on container beverage prices and competition.

<sup>271</sup> Sound Resource Management Group, City of Tacoma and Green Solutions, 2005, Economic & Environmental Benefits of a Deposit System for Beverage Containers in the State of Washington

<sup>272</sup> Northbridge Environmental Management Consultants, 2006, Analysis of Vermont's Bottle Bill: Costs, Impacts and Expansion

retailers, followed by labour costs for retailers that use manual sorting, the lease and throughput related charges of RVMs<sup>273</sup>.

As part of the Michigan scheme, retailers are given 25% of unclaimed deposits, rather than the common system of being provided a handling fee as financial support<sup>274</sup>.

### 5.1.4.3 Europe

In Europe, costs on retailers are often subsidised through financial support from government or the Managing Agency. In Denmark, financial support in the form of a handling allowance or subsidy is provided. The financial support provided to retailers with RVMs and compactors is less than the amount provided to retailers without RVMs. This is done to reflect the actual cost to the retailer<sup>275</sup>. Unlike Denmark, the financial support provided in Sweden to retailers with RVMs is greater than the amount provided to retailers without. This is to incentivise retailers to install RVMs<sup>276</sup>. Some retailers in Sweden have implemented separated RVMs for plastic bottles and cans rather than RVMs that accept the combination of both materials, as the latter RVMs are a lot more expensive<sup>277</sup>.

In Norway, financial support in the form of a handling allowance is provided to retailers. In 2011, retailers were given NOK0.20 (~NZD\$0.034) per crushed can, and NOK0.25 (~NZD\$0.042) per crushed bottle for the use of automated systems such as RVMs. For manual handling of beverages, retailers were given NOK0.05 per can (~NZD\$0.0085) and NOK0.02 per bottle (~NZD\$0.0034)<sup>278</sup>.

### 5.1.5 Site Logistics

Retailers have a large part to play in the success of the container return scheme. They are required to be well educated on their roles and on the scheme from its initiation in order to be able to inform consumers. If containers are accepted and the deposit refunded manually, retailers are also required to ensure that their staff are trained in the below:

- Recognising deposit labels and eligible containers;
- Inspecting packaging and barcodes to ensure that they are intact;
- Refunding the correct deposit amount;
- Sorting the collected containers correctly;
- Reporting requirements on the empty containers that they collect and refund; and
- Recording of accounting, drop offs and collections.

This may inconvenience small retailers who do not operate comprehensive tracking and recording systems. If glass containers are manually collected, retailers are required to make sure that the containers are kept secure and unbroken until collection. RVMs are often seen as a benefit as they can save retailers the burden of training their staff on the details of the schemes and with dealing with collections, deposit refunds and financial reporting.

Additional logistical requirements for retailers at the beginning of schemes include the organisation of contracts for the collection of the returned containers<sup>279</sup>. Section 5.1.5.1 to Section 5.1.5.4 below discuss the impacts of the scheme on site logistics based on experiences in Australia, the United States of America, Canada and Europe.

<sup>273</sup> DSM Environmental Services, Inc., 2007, The Costs of Beverage Container Redemption in Vermont

<sup>274</sup> Sound Resource Management Group, City of Tacoma and Green Solutions, 2005, Economic & Environmental Benefits of a Deposit System for Beverage Containers in the State of Washington

<sup>275</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK

<sup>276</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK

<sup>277</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK

<sup>278</sup> Martin Stewardship & Management Strategies Pty Ltd, 2011, Preliminary Report - Best Practice International Packaging Approaches

<sup>279</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

### 5.1.5.1 Australia

In New South Wales, the administrative pressures at the start of the scheme are reported to be greater for smaller retailers than they are for larger retailers, and the administrative costs are similarly higher per unit cost of containers for smaller businesses.

Feedback from retailers suggests that administrative difficulties include the below:

- An unclear process of applying to become a collection point operator and fulfilling the required responsibilities;
- A lack of helpful online resources; and
- Incompatibilities with the systems used by the network operator.

The systems of the network operator appeared configured to primarily suit larger retailers<sup>280</sup>.

### 5.1.5.2 United States of America

An assessment undertaken in 1994 for the US EPA estimated labour handling times for a medium sized retailer participating in container return schemes<sup>281</sup>. The assessment found that an average of 3.1seconds was required for each aluminium can and 6.9seconds was required for each glass bottle. The average labour time for all eligible containers was 3.1seconds. Looking at how this impacted the wages of retail staff, the estimated labour time meant that the labour cost per container was USD\$0.007 and the total retail cost per redeemed container was USD\$0.023<sup>282</sup>. To calculate these costs, the assessment looked at 1993 data from the Bureau of Labour Statistics and an average wage of USD\$8 per hour. Adjusting these values into current wage rates (USD\$12.93/hr for recycling workers) and into New Zealand currency (NZD\$19.80/hr) shows the total retail cost per container was NZD\$0.056 or NZD5.6-cents.

When the expansion of eligible containers and materials was being considered in Vermont in 2006, many retailers viewed it as problematic because they had purchased RVMs that only accepted the previous eligible scope of containers. New containers could not be returned through the RVMs and retailers would need to collect and refund the deposit on new containers manually. This would be in addition to having RVMs for the original eligible containers. Additionally, retailers believed that the low volume of the new materials types such as HDPE, LDPE and steel would not be sufficient to warrant an investment in new RVMs. In addition to the associated space requirements, retailers were required to undertake twenty (20) sorts of materials and brands. This included two (2) to four (4) container materials for each of the bottle and beer wholesalers. An increase in scope of containers would mean an increase in sorting requirements and in labour, space and maintenance costs<sup>283</sup>.

Since accounting and sorting of returned empty bottles in Vermont was organised based on brand and distributor rather than based on material, it meant that retailers were required to separate a material such as aluminium, into, for example, seven different sorts, and organise for seven different collections. In the end however it was reported that the material would be mixed together anyway<sup>284</sup>.

In California, the systems for both the scheme and retailers were said to be more efficient due to the integration of collection and reprocessing systems. If retailers did not collect eligible containers, they

<sup>280</sup> NSW Business Chamber, 2018, NSW Container Deposit Scheme: Monitoring the impacts on container beverage prices and competition.

<sup>281</sup> <https://www.recyclingtoday.com/article/is-a-national-bottle-bill-worthwhile-/>

<sup>282</sup> Recycling today, 2001, Is a National Bottle Bill Worthwhile?, available from:

<https://www.recyclingtoday.com/article/is-a-national-bottle-bill-worthwhile-/>

<sup>283</sup> Northbridge Environmental Management Consultants, 2006, Analysis of Vermont's Bottle Bill: Costs, Impacts and Expansion

<sup>284</sup> DSM Environmental Services, Inc., 2007, The Costs of Beverage Container Redemption in Vermont.

had the responsibility of making sure that nearby container return facilities locations are available to customers<sup>285</sup>.

### 5.1.5.3 Canada

In Canada, some retailers found the site logistics of taking back refillable containers too demanding and have stopped stocking refillables in order to reduce their labour, space and general management requirements related to taking back the refillable containers<sup>286</sup>.

In Nova Scotia, retailers were required to display the deposit amount on the receipts given to their customers and hence were required to update their receipt printing systems and settings. Retailers were also required to display signage informing customers that a deposit is charged on beverages and directing them to the nearest container return facility<sup>287</sup>.

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*In Nova Scotia, retailers were required to display the deposit amount on the receipts given to their customers and hence were required to update their receipt printing systems and settings. Retailers were also required to display signage informing customers that a deposit is charged on beverages and directing them to the nearest redemption location*

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### 5.1.5.4 Europe

Site logistics related to space requirements were treated differently in the various European schemes.

In Denmark, many smaller shops did not have space for RVMs and therefore did not have the option for operating one. They were then only able to take back empty containers and refund deposit amounts manually. Manual collections could only accept containers made of the same materials as those sold in the stores. RVMs would have instead offered the option of accepting bottles and cans of materials that were not generally sold in that retail store<sup>288</sup>.

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*As part of the schemes, retailers are often required to allocate valuable space for the collection of empty containers to attach equipment to the store walls and to alter areas around the shop such as the entrance or other designated areas for the RVMs or collection areas*

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In Lithuania, the requirement for participating in the scheme only applied to stores larger than 300m<sup>2</sup> and to all stores in rural areas (see Section 4.1.2.2 for further information). Other retailers however could still participate if they wanted to. Depending on the retailer's size, stores were provided with RVMs to be placed inside or outside the stores as kiosk installations<sup>289</sup>.

If retailers were short on space in Germany, they were permitted to combine all their collected beverage containers together rather than sort them separately per materials. The commingled containers were then sorted after collection from the retailers and prior to being sent for processing<sup>290</sup>.

## 5.1.6 Modifications Required

As part of the schemes, retailers are often required to allocate valuable space for the collection of empty containers. Building work may also at times be required to attach equipment to the store walls and to alter areas around the shop such as the entrance or other designated areas for the RVMs or collection areas. From the first day of the operation of the scheme, not all retailers were able to have their old stock cleared and thereafter sell only eligible containers. Realistically, retailers often started

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<sup>285</sup> Recycling today, 2001, Is a National Bottle Bill Worthwhile?, available from: <https://www.recyclingtoday.com/article/is-a-national-bottle-bill-worthwhile/>

<sup>286</sup> CM Consulting, 2018, Who Pays What - An Analysis of Beverage Container Collection and Costs in Canada

<sup>287</sup> CM Consulting, 2018, Who Pays What - An Analysis of Beverage Container Collection and Costs in Canada

<sup>288</sup> Directorate General for External Policies of the Union - Policy Department, 2011, A European Refunding Scheme For Drinks Containers.

<sup>289</sup> Open Access Government, 2018, Recycling: Lithuanian deposit system exceeds all expectations, Available from: <https://www.openaccessgovernment.org/recycling-lithuania-deposit-system-exceeds-all-expectations/45003/>

<sup>290</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

restocking their shelves with eligible containers once the previous containers were sold out. A transition period for retailers, with a deadline for compliance is often required<sup>291</sup>.

In New South Wales, Australia, the uptake by the retail industry for the manual collection of beverages or the installation of RVMs was found to be very low in the City of Sydney council area. This is because the RVMs used in New South Wales have a large footprint, between 24m<sup>2</sup> and 36m<sup>2</sup>, and the cost for space and lease of land area in the City of Sydney area is considered very expensive. Space modifications to retail stores are hence a restriction in the City of Sydney area, and in such a densely populated area, the RVMs were considered to have the potential of negative traffic impacts<sup>292</sup>.

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*Health and safety impacts of the scheme on retailers appear to be minimal. Looking at the schemes implemented around the world, it was shown that by undertaking a thorough and appropriate risk assessment prior to the start of a scheme, most concerns are minimised, and health and safety impacts are mitigated*

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### 5.1.7 Health and Safety

Health and safety impacts of the scheme on retailers appear to be minimal. Looking at the schemes implemented around the world, it was shown that by undertaking a thorough and appropriate risk assessment prior to the start of a scheme, most concerns are minimised, and health and safety impacts are mitigated.

General concerns regarding the acceptance of empty containers in retail stores tend to relate to the below bullet list and interestingly, no information was available reporting any issues associated with theft of containers<sup>293</sup>:

- Safe collection and storage of glass containers;
- Returned containers containing residual liquids;
- Pest and odour issues associated with empty packaging; and
- Manual handling of large numbers of containers.

As stated above, with thorough risk assessments and guidance from managing agencies, these concerns can be mitigated.

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*To understand the scheme, it is important that retailers can provide the correct information to consumers when asked about the scheme*

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## 5.2 Scheme Awareness

As the point of access for the purchase of containers, retailers have a large role to play in providing scheme awareness to the general public, and hence are required to understand the scheme themselves. It is important that retailers can provide the correct information to consumers when asked about the scheme (e.g. Te Reo Māori, multi-lingual options).

Additionally, several Managing Agencies or government departments have developed scheme signage for the benefit of retailers. In Queensland, Australia, retailers are encouraged to display information on the scheme in their stores. To help with this, the Managing Agency of the scheme has developed a toolkit of support materials that retailers can request to receive in order to display the information in their stores<sup>294</sup>. In Nova Scotia, retailers are required to display signage that informs customers that a deposit is charged on beverages and directs them to the nearest container return facility<sup>295</sup>. The Managing Agency in California has developed an online page that provides useful resources that are

<sup>291</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>292</sup> Direct communication with City of Sydney representatives, December 2019.

<sup>293</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>294</sup> COEX – Container Exchange, 2020, Retailers, available from: <https://www.containerexchange.com.au/industry-partners/>

<sup>295</sup> CM Consulting, 2018, Who Pays What - An Analysis of Beverage Container Collection and Costs in Canada

beneficial to retailers<sup>296</sup>. The online page directs retailers to the sections in the regulation that applies to them, to a map that shows retailers where the nearest container return facility is and if an RVM is available at that collection point, and to several relevant forms and documents.

RVMs are additionally useful in providing educational and promotional material. Depending on the specific scheme design, RVMs have the ability to display videos and images to customers as a way to provide promotions for store products or information on the scheme itself<sup>297</sup>.

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*Consistent marketing and participation of retailers is also important to many scheme managing agencies*

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### 5.3 Roles and Responsibilities

Retailers are required to be well informed of their roles and responsibilities in order to support the successful operation of the scheme. As mentioned in Section 5.1.5, if containers are accepted and refunded manually, retailers are required to ensure that their staff are trained in the below:

- Recognising deposit labels and eligible containers;
- Inspecting packaging and barcodes to ensure that they are intact;
- Refunding the correct deposit amount;
- Sorting the collected containers correctly;
- Reporting requirements on the empty containers that they collect and refund; and
- Recording of accounting, drop offs and collections.

Further, retailers in New South Wales are provided with an online factsheet from the New South Wales Environment Protection Authority (New South Wales EPA) website that outlines the responsibilities of all retailers in New South Wales<sup>298</sup>. In general, all retailers in New South Wales have the responsibility to ensure they only stock eligible containers and finish their supply of non-eligible containers by the end of the transition period. The factsheet outlines the below:

- An explanation of the purpose and timeline of the two-year transition period. The transition period was implemented to help retailers transition their old stock, with enough time to ensure that they are stocked with eligible containers by the two-year deadline;
- The penalties that apply if retailers are found to be selling non-compliant containers. Penalties for non-compliances did not apply during the transition period;
- An explanation of the eligible and non-eligible containers under the scheme;
- An explanation of why it is important to only supply compliant containers;
- A guide to preparing for the changes in container stocks. The guide includes talking to suppliers, retailers reviewing incoming stock (e.g., ability to sell incoming stock that does not comply with the Regulation) and considering alternatives and temporary solutions (e.g., temporary solutions to avoid the sale of non-compliant stock such as affixing a compliant label to a container before it is supplied or put on shelves);
- The role of the New South Wales Environment Protection Authority (EPA) as the compliance regulator; and
- Links to legislation and contact details for New South Wales EPA.

Additionally, in New South Wales, retailers may qualify as “first suppliers” if they are selling in their retail stores eligible beverages that they have themselves manufactured. In this situation, retailers are

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<sup>296</sup> California Department of Resources Recycling and Recovery (CalRecycle), 2019, Retailers/Dealers, available from: <https://www.calrecycle.ca.gov/BevContainer/Retailers/>

<sup>297</sup> Reloop Inc., 2018, In Our Opinion: Why deposits make sense for retailers, available from: <https://www.reloopplatform.org/in-our-opinion-why-deposits-make-sense-for-retailers/>

<sup>298</sup> NSW EPA, 2019, NSW Container Deposit Scheme: retailer obligations, available from: <https://www.epa.nsw.gov.au/publications/return-and-earn/19p1537-cds-retailer-obligations-fact-sheet>

obliged to act as first suppliers and must ensure that they operate and sell compliant containers as is required under the scheme. The roles of first suppliers are provided on the New South Wales EPA's website<sup>299</sup>. Retailers may also qualify as "exporters". This applies when retailers have purchased compliant containers in New South Wales but are intending to sell them interstate or overseas. In this situation, exporters may be able to claim a rebate on their purchased containers. The role and responsibilities of exporters are outlined on the scheme's website<sup>300</sup>.

The roles and responsibilities for retailers differ under each scheme, with for example, retailers having a more direct influence on the day-to-day operation and performance of a scheme (e.g., scheme Managing Agency) where a regulated return-to-retail option is provided for. Consistent marketing and participation of retailers is also important to many scheme managing agencies. Retailers are encouraged to find this information by contacting their scheme's managing agencies. In Queensland, the Scheme Coordinators have prepared a toolkit that can be used by all retailers, ensuring a consistent message to all (see Section 5.2 for further information). Additional responsibilities for retailers in other schemes include those such as in California where retailers that did not collect eligible containers are required to know the container return facility locations that are available to customers<sup>301</sup>.

In Lithuania, the roles and responsibilities of retailers are listed out in an online page called "For Sellers" on the Managing Agency's website<sup>302</sup>. Obligations for retailers in Lithuania apply only to retailers with stores larger than 300m<sup>2</sup> and all stores in rural locations. All other retailers can volunteer to participate. The responsibilities listed on the website include the below:

- The requirement for retailers that sell beverages to take back eligible containers under the scheme and refund the deposit;
- The retailers that are exempt from the obligations under the scheme;
- The forms of deposit refunds that can be provided to customers such as cash or credit to a shopping bill;
- The requirement for a price tag of a beverage to include the deposit value;
- The places where retailers can collect eligible containers and refund deposits including at nearby sites no further than 150m away;
- The dimensions and type of signage that must be displayed at retail stores to show required information on the scheme; and
- The packaging and container requirements that retailers must check for, before providing deposit refunds, to ensure that the bottles collected are compliant.

The online page for retailers in Lithuania also discusses additional information such as contracts management between the Managing Agency and retailers, the obligation for the Managing Agency to provide RVMs to retailers, and technical information for the RVMs.

### 5.3.1 Hospitality Businesses

In addition to retailers such as supermarkets and dairies selling eligible scheme containers to consumers, hospitality businesses are also important participants in container return schemes as they can either sell eligible scheme containers (e.g., eligible beverages) to consumers for either onsite or offsite consumption. As a result, hospitality businesses provide another important pathway whereby

<sup>299</sup> NSW EPA, 2020, Role of first suppliers of drinks containers, available from: <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/return-and-earn/role-of-first-suppliers-of-drink-containers>

<sup>300</sup> Return and Earn, 2020, Drinks suppliers and exporters, available from: <https://returnandearn.org.au/partners/drinks-suppliers/#exporters>

<sup>301</sup> Recycling today, 2001, Is a National Bottle Bill Worthwhile?, available from: <https://www.recyclingtoday.com/article/is-a-national-bottle-bill-worthwhile/>

<sup>302</sup> Užstato Sistemos Administratorius (USAD), 2020, available from: <https://grazintiverta.lt/en/for-business/for-sellers/>



consumers interface with a container return scheme and where the scheme Managing Agency (i.e., the organisation responsible for the performance and operation of the container return scheme) interfaces with another source of eligible scheme containers.

The following case study example illustrates how the Scottish container return scheme has acknowledged the hospitality sector and integrated these businesses into the scheme.

### 5.3.1.1 Scottish Case Study

Hospitality businesses, including for example, hotels, cafés, restaurants and bars are managed via two (2) distinct pathways under the Scottish container return scheme, namely:

1. Businesses that sell drinks for offsite consumption (e.g., cafés and takeaways); and
2. Businesses that sell drinks for onsite consumption only (e.g., restaurants and pubs).

Where a business sells an eligible scheme container to a consumer to consume offsite, the business is required to charge the Scottish deposit of 20p with the consumer able to get the deposit back when they return the container to a container return facility. Additionally, these businesses are also required to operate a container return facility if they sell eligible scheme containers. A further attribute applied to these business is in the case of a retail chain where there are multiple outlets, all of which are then required to operate a container return facility (e.g., accept the eligible containers, reimburse the consumer the appropriate deposit and store the collected material for collection). This means all businesses operating a container return facility receive a handling fee from the scheme Managing Agency which covers the costs of participating in the scheme and is agreed to by the retailer, producer and scheme Managing Agency<sup>303</sup>.

Where a business sells an eligible scheme container for onsite consumption, the business can choose whether to charge the Scottish 20p deposit or not as it is expected that the container will not leave the premises. Additionally, these premises are not expected to accept any eligible container returns from outside their own business with the scheme Managing Agency collecting the containers for recycling. This means the business pays the 20p deposit to the retailer or wholesaler which the scheme Managing Agency returns to the business once the eligible containers are returned for recycling (i.e., cost neutral for the business). Additionally, the business receives a portion of the handling fee agreed to by the retailer, producer and scheme Managing Agency. limited to the cost of materials used for collection and storage of the containers. However, it is worth noting here that if eligible scheme containers are sold from the same premises for offsite consumption, the business is required to operate a container return facility<sup>304</sup>.

It is also important to note here that Scottish hospitality businesses can apply for an exemption from acting as a container return facility if the following two (2) criteria are met which ensures accessibility for consumers<sup>305</sup>:

1. Get agreement from another container return facility to accept and collect eligible containers on their behalf.
  - a. The business must be able to demonstrate that the alternative container return facility is within reasonable proximity; and
  - b. If the exemption is approved demonstrate that consumers will still have reasonable access to a container return facility.
2. Provide evidence to satisfy Ministers that there is no reasonable way to operate a container return facility at the hospitality business premises without risking being in breach of relevant legal obligations such as food safety.

<sup>303</sup> <https://depositreturnscheme.zerowastescotland.org.uk/information-hospitality-businesses#>

<sup>304</sup> <https://depositreturnscheme.zerowastescotland.org.uk/information-hospitality-businesses#>

<sup>305</sup> <https://depositreturnscheme.zerowastescotland.org.uk/information-hospitality-businesses#>

Financial arrangements of a container return schemes are further discussed in Section 11, however for clarity the above financial information has been provided to illustrate how hospitality businesses interface with the Scottish container return scheme.

In a New Zealand context, hospitality businesses are an important sector providing, for example, services to consumers and supporting a wide range of businesses including, the Aotearoa New Zealand tourism industry. As such, hospitality businesses are also a significant source of eligible scheme containers due to establishments such as bars, cafés, restaurants and take-aways selling beverages for either onsite or offsite consumption.

## 5.4 Communication with Managing Agency

The communication that is undertaken between retailers and managing agencies has been touched on in previous sections. Most official websites of schemes, managing agencies, or of the relevant government departments will either have online information that's relevant to retailers, or will provide the contact details that retailers can use for information on the scheme.

In the Australian schemes, the Scheme Coordinator, which is often made up of members of the beverage industry, is responsible for managing the scheme and for managing retailers. The government departments, such as New South Wales EPA are responsible for ensuring that retailers are compliant. Similarly, in Lithuania and other European countries, the Managing Agency is a non-profit organisation made up of the beverage industry. In Lithuania, the Managing Agency's official website includes the direct contact details for the Client Service Manager who is responsible for the collection contracts and RVMs<sup>306</sup>.

## 5.5 The Aotearoa New Zealand Context

Retailers have an important role in the implementation and ongoing development of global container return schemes by providing the consumer with both the point of access for the sale of eligible containers and at times for the provision of container return facilities (e.g., return to retail, carpark RVMs). Retailers are also an information point for their communities which could include providing general information on the NZ CRS within their local area. With regards to the key NZ CRS scheme participants, retailers whilst providing the point of sale to the consumer may also represent a container manufacturer of products under the retailers' own brand (e.g., Woolworths).

As has been reported from across the many global container return schemes, consumer convenience and accessibility to container return facilities have been key design considerations. In a survey undertaken by ConsumerNZ between February and March 2020<sup>307</sup>, 70% of 2,114 New Zealanders surveyed noted that supermarkets would provide the most convenient place to return scheme eligible containers followed by 63% at collection depots (e.g., community recycling centres and recycling facilities), 40% to other retail outlets (e.g., bottles stores and dairies) with the remaining 8% noting other locations or would not bother returning the containers.

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*Most official websites of schemes, managing agencies, or of the relevant government departments will either have online information that's relevant to retailers, or will provide the contact details that retailers can use for information on the scheme.*

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<sup>306</sup> Užstatos Sistemų Administratorius (USAD), 2020, available from: <https://grazintiverta.lt/en/for-business/>

<sup>307</sup> ConsumerNZ Beverage Container Return Scheme Survey: Key Results 2020



**Figure 19: Support for New Zealand Container Return Scheme facilities**

Further, while the research findings note high-performing schemes are typically associated with a mandatory return-to-retail option, the NZ CRS Project Team had originally proposed a voluntary return-to-retail underpinned by a mandatory approach. However, feedback received from the SDWG noted a lack of support for this option and instead preferred a voluntary return-to-retail approach to be applied across all of New Zealand, including rural/regional areas. Acknowledging the feedback received from the SDWG and there being no global precedence of a voluntary return-to-retail underpinned by a mandatory approach, the Project Team, on balance, considers the NZ CRS return-to-retail option to include a voluntary approach only. However, under a voluntary approach it will be a requirement of the NZ CRS Managing Agency (see Section 14 for further discussion) to ensure any arrangements with retailers to host a container return facility represents a win-win outcome, which may include the following (see Section 4 for further discussion regarding return-to-retail as a container return facility):

- Provide retail stores with the opportunity to propose how they will voluntarily offer a container return facility option to customers;
- For clarity, retail involvement is seen as an opportunity to enhance connection with consumers;
- Proposals would need to comply with certain predetermined criteria, for example, consumer convenience, accessibility, capacity; and
- Retailers with approved voluntary container return facility options will then be required to have these facilities implemented by scheme commencement.

As such, the NZ CRS design will include voluntary return-to-retail participation which may include a Reverse Vending Machine (RVM) unit placed in the supermarket carpark to support consumer accessibility and convenience and/or other methods such as an RVM unit inbuilt inside the supermarket store footprint or a bag-drop facility (see Section 4 for further discussion).

It is also recognised that Aotearoa New Zealand retailers also include the hospitality sector (e.g., bars restaurants, hotels, cafés). Recognising the significant amount of eligible containers that are sold to and consumed by consumers at these establishments, the NZ CRS will incorporate this (hospitality) sector into the design with the Managing Agency responsible for establishing the specific scheme requirements for those businesses selling eligible scheme containers for both onsite and offsite consumption. This is an important aspect of the NZ CRS design to ensure those eligible scheme containers moving through hospitality businesses are recovered and recycled by the NZ CRS.

While it is not the intent to reintroduce the findings of the retailer section here, the following list provides a non-exhaustive list of retail specific components that will be incorporated into the NZ CRS design:

- Transition period;
- Trans-Tasman arrangement regarding movement of eligible containers;
- Procurement of return-to-retail locations and associated arrangements for leasing and/or purchasing of Reverse Vending Machines; and

- Provision of scheme marketing material to engage with consumers (e.g., Te Reo Māori and multi-lingual translations).

## 5.6 Summary of Key Findings

The outcomes of the above research show that retailers have an important role in the implementation and ongoing development of global container return schemes by providing the consumer with both the point of access for the sale of eligible containers and at times for the provision of container return facilities (e.g., return to retail, carpark RVMs). In this regard, retailers along with other scheme participants (e.g., producers, consumers, importers, manufacturers) have a significant role to play in kaitiakitanga whakanaonga - product stewardship by helping to develop greater focus on waste and environmental sustainability through design, production and consumption decisions.

As retailers provide the direct engagement points at which a customer purchases eligible containers, and in the case of a return-to-retail option, returns containers for the appropriate deposit refund, established and coordinated communication with the Managing Agency is required to ensure customer engagement is accurate, informed and consistent. Additionally, across the global container return schemes the Managing Agency and retailers have typically established a transitional period to allow retailers time to make the appropriate changes to product lines, and/or, change over in product pricing, prior to the end of the transitional period.

Retailers participating in existing container return schemes have generally noted manual collection and associated manual cash refunds as an inconvenient form of payment. Retailers would prefer to incorporate appropriately sized RVMs into the store front and/or entrance way to provide their customers with a convenient way to return eligible containers whilst undertaking their shopping.

The following conclusions are also drawn from the research:

- Increased container costs are ultimately passed on to retailers from the beverage suppliers. Retailers then pass the increased costs to consumers by adding it to the total cost of the beverages (Section 5);
- Container return schemes that have a return-to-retail obligation tend to have higher container redemption rates (Section 5);
- The impact that container return schemes have on the retail industry appears to be primarily positive due to increased foot traffic (Section 5.1.1). This benefit also drives competitor activity between retailers to host return facilities;
- Retailers operating with a mandatory return-to-retail system are reported to be very satisfied with the system as it has provided additional convenience to their customers and consequently ensured return traffic to their stores (Section 5.1.1);
- RVMs (in comparison to manual collections) are perceived by retailers as a benefit to their sales as they provide refunds in the form of vouchers or cash and encourage customers to enter the retail store and purchase new goods (Section 5.1.2);
- Negative perceptions of manual collections were reported to be related to the slowing down of customer service for shoppers (Section 5.1.2);
- In New South Wales, retailers were reportedly reluctant to dramatically increase the prices of their products to reflect the cost of the container return scheme in case it led to a change in customer purchasing habits, affecting not only the sales of beverages covered by the scheme, but also other products purchased at the store at the same time (Section 5.1.3);
- In Queensland, it was found that the price increases for alcoholic and non-alcoholic beverages were similar for small and large retailers and similar for Brisbane and regional Queensland (Section 5.1.3);

- The costs incurred on retailers due to the operation of the schemes differed based on the designs of the schemes (Section 5.1.4);
- In Europe, costs on retailers are often subsidised through financial support from government or the Managing Agency. In Denmark, financial support in the form of a handling allowance or subsidy is provided (Section 5.1.4);
- As part of the schemes, retailers are often required to allocate valuable space for the collection of empty containers. Building work may also at times be required to attach equipment to the store walls and to alter areas around the shop such as the entrance or other designated areas for the RVMs or collection areas (Section 5.1.6);
- As the point of access for the purchase of containers, retailers have a large role to play in providing scheme awareness to the general public, and hence are required to understand the scheme themselves. It is important that retailers can provide the correct information to consumers when asked about the scheme (e.g. Te Reo Māori, multi-lingual options) (Section 5.2);
- Hospitality businesses are also important participants in container return schemes as they can either sell eligible scheme containers (e.g., eligible beverages) to consumers for either onsite or offsite consumption (Section 5.3); and
- Most official websites of schemes, managing agencies, or of the relevant government departments will either have online information that's relevant to retailers, or will provide the contact details that retailers can use for information on the scheme (Section 5.4).

## 5.7 Summary of Design Feedback Received

The following table provides a high-level summary of the feedback received from the Scheme Design Working Group (SDWG) members after reviewing the section information. As many suggestions as possible have been incorporated but the NZ CRS Project Team acknowledge that the wide range of views expressed meant not every edit could be accepted. The NZ CRS Project Team is grateful for those who have provided feedback and where possible these have been used to provide further clarity and context throughout this section and to identify areas requiring further assessment during the NZ CRS implementation stage (Section 17).

<b>The Retailer Feedback – High-Level Summary</b>	
<b>Areas for further Investigation</b>	
User experience and customer experience mapping for the ideal consumer return experience (see Section 17 for further discussion).	An analysis of the relationship between return-to-retail, the deposit value, and the return rate (see Section 11 for further discussion).
The IT system and technology to support retailers and consumers (see Section 11 and Section 17 for further discussion).	The minimum distance requirements between retail premises to minimise cost impacts (see Section 17 for further discussion).
The environmental benefits of reduced consumption of single use packaging (see Section 17 for further discussion).	The costs and logistics for setting up return-to-retail, including funding for the infrastructure, modifications required, and any changes to planning regime or resource consent approvals (see Section 17 for further discussion).
Impacts on retailers and small businesses such as cash flow and competition within retailers (see Section 17 for further discussion).	Differences in costs, benefits and logistics between mandatory and voluntary return-to-retail (see Section 17 for further discussion).

<b>The Retailer Feedback – High-Level Summary</b>	
How the voluntary approach will be initiated and who will determine the collection network (see Section 14 for further discussion).	Ways to incentivise the voluntary uptake of return-to-retail (see Section 14 for further discussion).
The role of legislation and the situations where legislation may be triggered, such as if the Managing Agency refuses a level of retail involvement even if retail is willing (see Section 13 and Section 14 for further discussion).	Examples of the role of retailers in strong international refillables markets (see Section 14 for further discussion).
<b>Opposing Views</b>	
<p>Voluntary return-to-retail underpinned by mandatory:</p> <ul style="list-style-type: none"> <li>Members in support state this approach will drive high return rates.</li> <li>Members against state that a mandatory requirement is expensive, will devalue community collection points and doesn't necessarily improve collection rates.</li> </ul>	<p>The Managing Agency to determine contractual arrangements:</p> <ul style="list-style-type: none"> <li>Members in support state that contracts should offer a range of options to retailers including ownership and servicing of the facility and should consider individual store specifications.</li> <li>Members against state that contracts should be up to collection point operators, especially where RVMs are leased or purchased.</li> </ul>
<p>Retailers to share responsibility in kaitiakitanga whakanaonga - product stewardship principles:</p> <ul style="list-style-type: none"> <li>Members in support state that retailers have a key role in achieving outcomes.</li> <li>Members against state that since retailers will be volunteering, the responsibility should lie with the Managing Agency and communicated down to retailers.</li> </ul>	
<b>Do not Support the Following</b>	
Producers who are also retailers to act as collection point operators due to fraud risks.	Allowing only major supermarkets to participate and partner with the voucher system.
<p>The idea that scheme costs are passed on to consumers.</p> <p>Retailers can absorb some of the costs or push costs back onto beverage producers to avoid adding costs to consumers.</p>	<p>Cash refunds at retail.</p> <p>Vouchers for use at participating retailers are preferred, with consideration of fair-trade requirements.</p>
Mandating the use of RVMs in retail stores.	
<b>Support the Following</b>	
Transition period to be liaised with producers not retailers.	Small retailers having a voluntary approach or opting out of mandatory scheme.

The Retailer Feedback – High-Level Summary	
Additional Design Considerations	
Scheme awareness to be financial supported by the Managing Agency.	Actual testing with retailers, small businesses and consumers to be undertaken.

## 5.8 Component(s) to be Included in the New Zealand Container Return Scheme Design

Taking the above key findings into account including feedback from stakeholders involved in the NZ CRS design, the Project Team are of the view that the following components will be included in the NZ CRS design:

- Return-to-retail is based on voluntary participation by retailers. For completeness this also applies to rural Aotearoa New Zealand.
  - The reason why this is good for Aotearoa New Zealand is that the current network of retail locations (e.g., supermarkets) provides consumers with a convenient number and choice of locations which may compliment day-to-day activities such as shopping, meaning eligible scheme containers can be returned at the same time. Under a voluntary approach it is for the Managing Agency to ensure the arrangements with retailers to host a container return facility represents a win-win outcome.
- Hospitality businesses (e.g., hotels, restaurants, bars, cafés and take-aways) will be included within the NZ CRS design with the Managing Agency responsible for establishing the specific scheme requirements for those businesses selling eligible scheme containers for both onsite and offsite consumption.
  - The benefit of this approach to the NZ CRS and Aotearoa New Zealand is to ensure those eligible scheme containers moving through hospitality businesses are recovered and recycled by the NZ CRS. Additionally, the Managing Agency is provided the flexibility to establish scheme specific arrangements, for example, collection of containers that support the ultimate success of the scheme.
- The Managing Agency is required to determine and implement the following:
  - The Managing Agency in consultation with the retail sector will establish a suitable transition period and deadline for compliance to help retailers transition old stock and ensure enough time is available to stock with eligible containers before the end of the transition period.
    - The purpose of a transition period to Aotearoa New Zealand retailers is to ensure retailers are provided enough time to adjust to scheme requirements including the transition from old stock to new stock and to establish new processes where needed.
  - Trans-Tasman arrangement specific to movement of eligible containers including other relevant international arrangements (i.e., import and export considerations) without compromising the outcomes of the NZ CRS (e.g., the Aotearoa New Zealand deposit amount).
    - The reason why this is good for Aotearoa New Zealand is to ensure that all relevant legislation and regulations are assessed to ensure all legal components have been addressed and accounted for to support the implementation of the NZ CRS and the ultimate success of the scheme.
  - Determine the arrangements for leasing and/or purchasing RVMs (financial scheme costs will be discussed in Section 11).

- The benefit of this approach is to enable retailers to potentially benefit from any contractual technology supply arrangements as established by the Managing Agency with relevant equipment providers.
- Provision of marketing material and standards (e.g., marketing toolkit, Te Reo Māori and multi-lingual translations) to ensure consistent communications are established between retailer, scheme and customers.
  - The reason why this is good for the NZ CRS and Aotearoa New Zealand is to apply a consistent style of messaging across all participating retailers supporting clear and transparent messaging to consumers. Additionally, to ensure all scheme participants have a clear understanding of their role and responsibilities and have access to scheme information tailored to their specific role.
- Roles and Responsibilities
  - The Managing Agency will determine the specific return-to-retail contractual arrangements, which may include:
    - Recognising deposit labels and eligible containers.
    - Inspecting packaging and barcodes to ensure that they are intact.
    - Refunding the correct deposit amount.
    - Sorting the collected containers correctly.
    - Reporting requirements on the empty containers that they collect and refund.
    - Recording of accounting, drop offs and collections.
    - Additional costs on retailers.
    - Site logistic requirements.
    - Modification requirements to the retailer.
    - Impacts on health and safety.
      - The reason why this approach is good for New Zealand is that the Managing Agency has the ability to manage all registered container return facilities (including return-to-retail) under a consistent contractual arrangement setup which may include, for example, site logistical requirements.



## SECTION 6: THE CONSUMER

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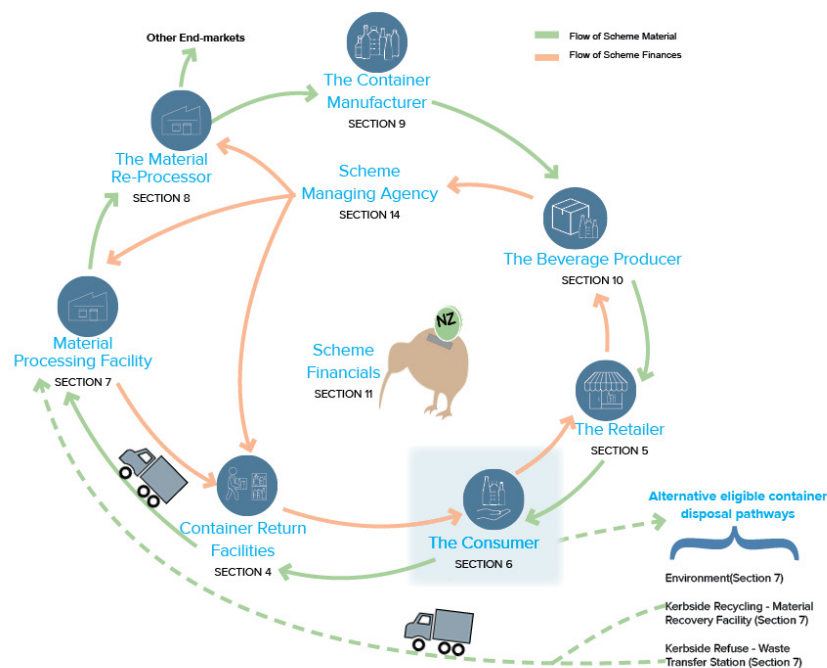
## Section 6 The Consumer

While consumer participation, as part of a scheme, is certain, the level of participation is also a factor that influences the success of the scheme. To better understand the role of consumers, the impacts that they experience, the benefits that they receive and their general behaviour patterns, research was undertaken on consumers in existing schemes around the world.

The extent of the role of the consumer varies depending on the design of the scheme. The involvement of consumers can be summarised by the below roles:

- Buying of eligible containers;
- Collecting and returning of eligible containers;
- Collection of deposit refunds individually;
- Donating refunded deposits to other organisations;
- Raising money for communities through the organisation of the collection of litter and refunding of eligible containers; and
- Operating collection points.

As illustrated in the below schematic, consumers automatically participate as purchasers of beverages, however not all participate in collecting and returning eligible containers. The collection and returning of eligible containers are dependent on several factors including, for example, the incentives provided (e.g., deposit level), the education and marketing delivered by the scheme, and the convenience of participation. As illustrated the consumer can either return eligible scheme containers to scheme container return facilities (Section 4) to receive the appropriate deposit refund or via several other pathways (Section 7) where the consumer forfeits the deposit refund, including kerbside recycling bins, kerbside refuse bins or direct to the taiao - environment (i.e., litter).



Similarly, not all consumers can participate as operators of container return facilities. This will primarily depend on the design of the container return methodology. These differences are evident in Australia. In South Australia and Queensland, the community is largely involved in the operation of collection

depots, however in New South Wales, less opportunity is provided to the community to operate their own collection points, due to the design of the collection and return methodology.

There are variations in the extent of the impacts felt by consumers, which are influenced by the success of the scheme. The success of the scheme is led by factors such as inefficiencies experienced by retailers, convenience of return locations, container return rate targets, time and resource requirements for sorting, and more. The operational and systemic efficiency of the scheme will decide the extent of negative impacts, including cost implications, felt by consumers.

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*The costs of schemes on consumers will depend on whether consumers will collect and claim refunds or if they will absorb the additional costs by not returning container and or donating the proceeds.*

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As the receivers of the deposit refunds from eligible containers, consumers can experience economic benefits. The groups of consumers benefiting from the refunds are diverse and includes the below:

- Residents, whanau – families and marae individually collecting and refunding their containers;
- Residents, whanau – families and marae operating collection and deposit refund points;
- Organisations operating collection points and employing members of the community;
- Charities, private organisations and schools receiving donations; and
- The local community where collection points are located.

The benefits experienced by a local community are related both to the increase in income, increase in employment and reduction in litter.

Lastly, consumers are not only impacted by schemes but also impact schemes by their preferences and behaviour patterns. These should be considered when planning a scheme to ensure an informed design is created. Some patterns in preferences and behaviour, identified in different existing schemes, are outlined in the sections below.

## 6.1 Consumer Experience

The experience of consumers as part of a scheme can be categorised as follows:

- Cost implications on consumers;
- The impact of convenience;
- Income opportunities;
- General consumer preference and behaviour; and
- Awareness of the scheme and its kaupapa - purpose.

The methods used in different schemes around the world to enhance the benefits of consumers, and case studies showing evidence and examples of consumer experience are discussed in the sections below.

### 6.1.1 Costs on Consumers

The costs of schemes on consumers will depend on whether consumers will return eligible scheme containers and claim deposit refunds or if they will absorb the additional costs by not returning container and/or donating the unredeemed deposits. Working towards a high return rate of containers inherently benefits consumers by ensuring that they are encouraged to return their containers<sup>308</sup>. Inefficiencies in the regulatory and operational activities mean that inefficiencies are passed on to

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<sup>308</sup> Marsden Jacob Associates, 2018, A Model Framework for Container Refund Scheme in Tasmania.

retailers who will add the costs to their products. Hence, an inefficient system can be costly to consumers<sup>309</sup>.

Inefficiencies in schemes in Europe have meant that consumers have chosen to shop internationally in order to avoid additional costs from the schemes in their countries. Examples of this were discussed in Section 5, such as in Denmark where consumers have chosen to shop in Germany rather than in Denmark as it is cheaper to shop in Germany, especially when buying in bulk<sup>310</sup>. On the contrary however, Denmark has been able to reduce costs on consumers by designing additional measures to reduce the amount of unredeemed deposits. In 2015, the city of Copenhagen introduced shelves on public bins that allowed residents that did not want to collect and return their containers to store their containers on the shelves to be picked up later by others. The deposit shelves were introduced to increase the safety and convenience of those that collected litter but also to reduce unredeemed deposits and hence costs of the system on consumers. Before the implementation of the deposit shelves, it was reported that there were 166 million kroner (~NZD\$39,257,257.00) unredeemed deposits. After the operation of the trial project of the shelves, it was reported that the unredeemed deposits of Copenhagen reduced by 49%<sup>311</sup>.

Costs on consumers are often proposed by stakeholders as a negative consequence of obligatory schemes. This can be seen in situations where national or state schemes, not yet implemented, have been proposed. A study that discussed the introduction of a scheme in the United Kingdom<sup>312</sup> noted that disadvantaged groups in the community might view the scheme negatively as it could add costs on those who cannot afford it. People that would be most affected would include lower socio-economic families, those with accessibility issues such as the elderly and those without convenient transport systems. Additionally, families with smaller living spaces would not be able to participate in a system that requires storage spaces for containers or the separation of different sorts of containers. Hence those who are unable to redeem their deposits would be paying more for their beverages. In this situation, it was suggested that kerbside recycling is a more convenient system for those who cannot participate.

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*Ensuring that there are enough refund points located conveniently for consumers*

*Encouraging diversity in the types of refund points including manual collections, RVMs, depots, retail, mobile and charity events*

*Encouraging a range of refund payments methods including cash, credit and donations*

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Similarly, when a state scheme was proposed for Minnesota, many argued that the scheme would impose cost implications on consumers<sup>313</sup>. It was stated that if consumers were to pay for a new scheme, they would be paying for two (2) recycling systems, one being the existing kerbside collection system. The International Bottled Water Association claimed that a deposit of USD\$0.10 on each container would increase a pack of 24 bottles of water by USD\$2.40, which is said to be nearly doubling the price. Like the United Kingdom, the association suggested that it is more time and cost efficient for consumers to throw their containers in their recycling bins rather than drive to collection points. Additionally, the Minnesota Beer Wholesalers Association and the International Bottled Water Association both mentioned that fraud and over-redemption in neighbouring states without schemes would lead to loss of jobs and increased costs on consumers. It was suggested that a preferred method would be to spend the money on increasing the education of the community on existing recycling

<sup>309</sup> The Centre for International Economics, 2018, NSW Container Deposit Scheme - EPA's fees for monitoring, compliance and approving containers, Draft Public Report.

<sup>310</sup> Martin Stewardship & Management Strategies Pty Ltd, 2011, Preliminary Report - Best Practice International Packaging Approaches.

<sup>311</sup> Bloomberg L.P., 2015, Finding Money in Copenhagen's Trash Cans, available from: <https://www.citylab.com/solutions/2015/10/finding-money-copenhagens-trash-cans/412498/>

<sup>312</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>313</sup> Minnesota Pollution Control Agency, 2014, Increasing recycling of beverage containers in Minnesota: Recommendations for a state wide recycling refund program.

systems. In addition to the costs on consumers, the American Forest Paper Association noted costs on the environment as a concern, mentioning that a scheme would lead to an increase in the carbon footprint of residents who would need to drive to drop off their containers rather than throw them in their recycling bins at home.

While costs on consumers appear to be a concern for many, several case studies have been found discussing the profits and income received by consumers due to the schemes. These are discussed in Section 6.1.3.

## 6.1.2 Convenience

Convenience, as part of the consumer experience, is key to the engagement of consumers and to ensuring that costs on consumers are minimised. The most expensive scheme for consumers is one that does not allow them to easily return their empty containers and collect the deposit refund and so one where consumers pay more for unclaimed containers. A study undertaken in 2018<sup>314</sup> for a proposed scheme in Tasmania in Australia states that that methods of supporting the convenience of consumers include:

- Ensuring that there are enough container return facilities located conveniently for consumers;
- Encouraging diversity in the types of container return facilities including manual collections, RVMs, depots, retail, mobile and charity events; and
- Encouraging a range of deposit refund payments methods including cash, credit and donations.

The study states that in diverse communities, having a variety of container return facilities provides consumers with different means to refund their containers, suiting their different circumstances.

The sections below show how convenience for consumers was considered in schemes in Queensland, California and Denmark. Additionally, an argument that has been used in Minnesota on the negative implications of a scheme on convenience for consumers is discussed.

### 6.1.2.1 Australia

In Queensland, a range of container return facilities were chosen in order to service the geographically diverse community in the state. To ensure that the needs of all communities were met, a gap analysis was undertaken after the scheme was already operational, to detect the regions that were not yet serviced and areas where consumers found difficulties in accessing container return facilities. In the identified locations, the Managing Agency of the scheme operated temporary pop-up container return facilities until those locations were converted to permanent points. Additionally, in those identified areas, engagement activities were undertaken to inform locals of the new container return facilities<sup>315</sup>.

### 6.1.2.2 United States of America

The Californian scheme prioritises convenience as part of its design. “Convenience zones” have been created and defined as areas inside a half mile (~0.8km) radius of large retailers that have a total annual sale of at least USD\$2million<sup>316</sup>. Each convenience zone must have a collection and deposit refund centre. If the convenience zones are exempt by the Managing Agency and do not have a deposit refund centre, all retailers that sell beverages in the zone are required to collect containers and refund the deposits. Retailers that are required to, but do not want to collect containers and refund deposits, may

<sup>314</sup> Marsden Jacob Associates, 2018, A Model Framework for Container Refund Scheme in Tasmania.

<sup>315</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>316</sup> Martin Stewardship & Management Strategies Pty Ltd, 2011, Preliminary Report - Best Practice International Packaging Approaches.

be required to pay a daily fee to the State<sup>317</sup>. By designing convenience in the scheme, support for consumers is prioritised.

In Minnesota, when a state-wide scheme was being proposed, many argued that the scheme would negatively impact on the convenience of the community<sup>318</sup>. The Minnesota Beverage Association claimed that an obligatory scheme would increase consumers time and efforts to recycle by a large amount, including introducing time and storage space requirements for sorting of containers. Additionally, this would require consumers to travel in order to recycle and would add to the cost implications of recycling. This was however argued against by Upstream, a national American environmental policy organisation, which claimed that those statements are misleading and have been disproved by other existing schemes in the United States of America, which have proven to be popular with consumers. Additionally, the Minnesota Grocers Association claimed that approximately 90% of residents in Minnesota lived within one and a half hours from a border of another state that had no deposit and therefore they anticipated that the majority of residents will chose to travel and buy beverages from bordering states at cheaper prices. This again would be considered an inconvenience to consumers.

### 6.1.2.3 Europe

An example of the convenience contributing to the success of a scheme is shown in Denmark. As mentioned in Section 6.1.1, the city of Copenhagen introduced deposit shelves on public bins in 2015. Denmark recognised that those who collected eligible containers often carried and pushed the increasingly heavy loads manually and spent long hours looking for litter on their feet. Many were also putting themselves in unsafe situations when looking through garbage bins that contained contaminated wastes and sharps. Most of the litter collected from parks in Copenhagen was being collected by newly arrived foreigners, retirees and the homeless. The deposit shelves were introduced to provide the community with a safer method of collection, while at the same time reducing the number of unredeemed containers. Before the full implementation of the deposit shelves, a trial was undertaken in three locations in Copenhagen. The trial proved successful and 95% of residents who were surveyed said that they were in support of the implementation of the deposit shelves. In a local Danish paper, the Deputy Mayor Morten Kabell was quoted to say that the deposit shelves keep “the city clean and at the same time [creates] a little more dignity for some of our marginalised residents”<sup>319</sup>.

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*Income benefits have not only been released by lower-income consumers but by local businesses and residents as well. Their income benefits have depended on many variables; however, it is important to note that if the proposed refund amounts for eligible containers are too low, consumers may not be incentivised enough to refund their containers. The incentive increases with increasing refund value*

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### 6.1.3 Income

One the largest benefits of schemes is that they have provided an additional income source to consumers. Lower income consumers who typically may not identify as environmentalists have been converted to regular recyclers<sup>320</sup>. Collections of litter in public areas are often undertaken by lower income consumers. Patterns in the collections undertaken by lower income consumers often include:

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<sup>317</sup> California Department of Resources Recycling and Recovery (CalRecycle), 2020, Frequently Asked Questions (FAQ), available from: <https://www.calrecycle.ca.gov/bevcontainer/programinfo/faq#Zones>

<sup>318</sup> Minnesota Pollution Control Agency, 2014, Increasing recycling of beverage containers in Minnesota: Recommendations for a statewide recycling refund program.

<sup>319</sup> Container Deposit Systems, 2019, Container Deposit Schemes an essential lifeline for homeless, available from: <https://www.containerdepositsystems.com.au/articles/container-deposit-schemes-an-essential-lifeline-for-homeless>

<sup>320</sup> Environmental and Energy Study Institute, 2018, Bottle Bills and Curbside Collection: An Overview of Recycling Policy Approaches, available from: <https://www.eesi.org/articles/view/bottle-bills-and-curbside-collection-an-overview-of-recycling-policy-approa>

- Large events and busy areas such as public parks are targeted as opportunities for large collections;
- Many of the homeless community will look through kerbside recycling bins and public place bins;
- Collections are mostly undertaken in the evenings and early hours of the morning; and
- Most homeless communities stick to their own neighbourhoods<sup>321</sup>.

Income benefits have not only been realised by lower-income consumers but by local businesses and residents as well. Their income benefits have depended on many variables; however, it is important to note that if the proposed deposit refund amounts for eligible containers are too low, consumers may not be incentivised enough to return their containers. The incentive increases with increasing deposit refund value<sup>322</sup>. There are many stories showing the income benefits realised through schemes globally. Australian and American case studies are discussed below.

### 6.1.3.1 Australia

The schemes in the Australian states have been designed to ensure that economic benefits can be experienced by the diverse types of participants in the schemes. In most Australian schemes, except for South Australia, RVMs provide the option of donating the deposit refund amount to charities. In South Australia where only cash is accepted, communities have been able to open their own depots and create an income for themselves and their local communities.

In New South Wales, it was reported in January 2020 that more than AUD\$900,000 has been raised for donations since the implementation of the scheme in December 2017<sup>323</sup>. This number may be an underestimation as registration with personal identification is not a requirement of the New South Wales scheme, and hence those who are redeeming cannot be identified as individuals or community groups. Privacy however is one of the attractions of the New South Wales scheme.

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*In New South Wales, it was reported in January 2020 that more than AUD\$900,000 has been raised for donations since the implementation of the scheme in December 2017*

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Donations in New South Wales are provided through the RVMs and through community groups that organise campaigns for collecting containers and raising money for their community. Many schools have used the scheme to raise money for new equipment, resources and activities. Similarly, children have been known to participate in collecting and returning containers to earn pocket money, and families have made the returning of containers a family routine in order to teach their children about recycling and earning money. During the large bushfire season in the summer of 2019-2020, more than AUD\$350,000 was raised to Rural Aid who were registered as donation partners in the RVMs. This money went to support bushfire and drought affected communities<sup>324</sup>.

Similarly, during the bushfire season of the summer of 2019-2020, Wildlife Rescue South Coast (WRSC) was featured as a donation partner on the RVMs. Wildlife Rescue South Coast (WRSC) volunteers care for native wildlife animals that have been injured or orphaned. Caring for animals can be costly for volunteers. A WRSC volunteer stated that they were caring for 30 joeys who required AUD\$40 of food a day each. Through the RVMs, consumers were able to donate their refunds to support the influx of

<sup>321</sup> Container Deposit Systems, 2019, Container Deposit Schemes an essential lifeline for homeless, available from: <https://www.containerdepositsystems.com.au/articles/container-deposit-schemes-an-essential-lifeline-for-homeless>

<sup>322</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>323</sup> Return and Earn NSW, 2020, 3 billion reasons to celebrate, available from: [https://returnandearn.org.au/exc\\_news/3-billion-reasons-to-celebrate/](https://returnandearn.org.au/exc_news/3-billion-reasons-to-celebrate/)

<sup>324</sup> Return and Earn NSW, 2020, 3 billion reasons to celebrate, available from: [https://returnandearn.org.au/exc\\_news/3-billion-reasons-to-celebrate/](https://returnandearn.org.au/exc_news/3-billion-reasons-to-celebrate/)



injured wildlife during the bushfire season. WRSC has also stated that it has become a habit for volunteers to collect and store littered containers while rescuing and caring for animals<sup>325</sup>.

In South Australia, community organisations have benefited from the scheme by operating depots and raising money for their communities and for their different causes. Scouts Australia, a volunteer-based organisation that works to support young people in all aspects of their life, operates ten collection depots throughout South Australia and employs more than 100 local members of the community<sup>326</sup>. In addition to the recycling depots, Scouts services and collects eligible containers from major events in South Australia and from hotels. In 2015, Scouts stated they collected more than 90million containers providing the community with more than \$9million. Money made from the operations of the collection depots is used to fund activities and programs to support young people<sup>327</sup>.

As part of the Queensland scheme, participants who wish to redeem containers and receive the appropriate deposit refund via electronic funds transfer or PayPal must register with a Scheme ID. A Scheme ID is not required if consumers wish to receive the appropriate deposit refund in cash. This has allowed the Managing Agency of the Queensland scheme to have visibility on the community benefits that are provided by the scheme. In November 2019, it was reported that over AUD\$100million has been returned to Queenslanders and community groups<sup>328</sup>. Recognising the benefits that the scheme provided the community, the state government offered infrastructure grants of up to AUD\$10,000 to more than 100 organisations and community groups to help them with participating in the scheme. The grants assisted participants with purchasing the equipment for the operation of the collection points.

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*As of 30 June 2019, 2,608 charities and community groups had registered for a scheme ID, 626 jobs were created, and AUD\$863,897 was returned to charities and community groups. The 626 jobs included jobs for people with disabilities, people who are trying to re-enter the workforce and those that have been unemployed*

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As of 30 June 2019, 2,608 charities and community groups had registered for a scheme ID, 626 jobs were created, and AUD\$863,897 was returned to charities and community groups<sup>329</sup>. The 626 jobs included jobs for people with disabilities, people who are trying to re-enter the workforce and those that have been unemployed. Case studies showing the employment and economic benefits realised from the Queensland scheme are listed below:

- Western Downs Outreach Project (WDOP), a not-for-profit organisation that supports the homeless community, opened a container return depot when the scheme started. The depot was very successful and WDOP extended their operating hours from 5-days to 7-days a week. WDOP also expanded their operation to service mobile sites in multiple towns. By 30 June 2019, WDOP had collected 3.8million containers and returned AUD\$380,000 to communities. WDOP was also able to support the community by creating community jobs through the scheme<sup>330</sup>.
- CQ Pet Rescue, a charity that rescues animals that are on the euthanasia list in pounds, collected over 66,000 containers and raised AUD\$8,550 for their charity between the start of the scheme and 30 June 2019. Local bars and businesses collect and give their containers to the charity to be

<sup>325</sup> Return and Earn NSW, 2020, Native wildlife volunteers under pressure after bushfires turn to Return and Earn, available from: [https://returnandearn.org.au/exc\\_news/native-wildlife-volunteers-clean-up-with-return-and-earn/](https://returnandearn.org.au/exc_news/native-wildlife-volunteers-clean-up-with-return-and-earn/)

<sup>326</sup> South Australia Environment Protection Authority, 2020, Testimonials, available from: [https://www.epa.sa.gov.au/environmental\\_info/container\\_deposit/testimonials](https://www.epa.sa.gov.au/environmental_info/container_deposit/testimonials)

<sup>327</sup> Container Deposit Systems, 2019, Container Deposit Schemes an essential lifeline for homeless, available from: <https://www.containerdepositsystems.com.au/articles/container-deposit-schemes-an-essential-lifeline-for-homeless>

<sup>328</sup> Waste Management Review, 2019, One billion returns in first year of QLD CDS, available from: <https://wastemanagementreview.com.au/one-billion-returns-in-first-year-of-qld-cds/>

<sup>329</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>330</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

redeemed. The charity has said that the scheme has been very easy for them to participate in and they have appreciated the efficiency of finances going into the charity's account<sup>331</sup>.

- Reef Recycling & Logistics, another not-for-profit organisation, manage two over-the-counter container return facilities, one of them located in an indigenous community. Across the two sites, AUD\$2.7million were refunded to the local community by 30 June 2019, and 27.2million containers were returned and diverted from the litter stream. The two container return facilities have provided employment to locals. At one of the sites, 64 part-time employees are employed. Because of the income made from the scheme, Reef Recycling & Logistics have been able to sponsor local events and support local charities such as disability services. The two sites also collect bottle caps and donate them to Lids for Kids who make mobility aids for children<sup>332</sup>.
- In Cairns, a local community member operates the CRP North Queensland Recycling Agents. As of 30 June 2019, AUD\$1.13million has been refunded to the local community through the scheme<sup>333</sup>.
- As of November 2019, RSPA Queensland, a pet rescue initiative, had raised about AUD\$3,500 by people choosing to donate to them through the RVMs as their deposit refund option<sup>334</sup>.

### 6.1.3.2 United States of America

According to Upstream<sup>335</sup>, a national American environmental policy organisation, a study was undertaken in 2011 for the Container Recycling Institute<sup>336</sup> to assess the employment impacts of different container recycling systems. According to the study, container return schemes created 11 to 38 more jobs than kerbside recycling systems. This was attributed to the fact that more work is required for the recovery of a greater number of containers and because of the decentralised and entrepreneurial nature of the operation of schemes. Container return schemes provided opportunity for more entrepreneurial activity and local businesses. Large existing commercial companies such as MRF operators may see schemes as having negative impacts on their usual income streams and employment numbers, however job creation numbers for the scheme in total are larger. Upstream also stated that a report prepared by Tellus Institute in 2011 showed that by increasing the recycling rate of the United States from 33% to 75%, 1.5million new jobs would be created.

As mentioned previously, schemes are very beneficial to those with low incomes. This is evident in San Francisco in California, which is an expensive place to live and has a large homeless population. According to PBS<sup>337</sup>, a media broadcasting service in the United States, while financial support is at times provided, the expenses of living in San Francisco are so high that the homeless community still need to rely on the scheme to purchase their daily necessities. Large events such as the Super Bowl are known to be frequented by the homeless community as they provide them with opportunities for greater income. According to one homeless man, a day or two of his week is spent collecting containers and two to three days are spent travelling to Our Planet, the container redemption centre. Our Planet is not conveniently located for the homeless community of San Francisco so the operator of Our Planet has started operating a bus that travels through the city six days a week to pick up those that would like to return their bottles and claim the deposit refund.

<sup>331</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>332</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>333</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>334</sup> Waste Management Review, 2019, One billion returns in first year of QLD CDS, available from:

<https://wastemanagementreview.com.au/one-billion-returns-in-first-year-of-qld-cds/>

<sup>335</sup> Minnesota Pollution Control Agency, 2014, Increasing recycling of beverage containers in Minnesota: Recommendations for a statewide recycling refund program.

<sup>336</sup> Morris, Jeffrey and Clarissa Morawski, 2011, Returning to Work: Understanding the Domestic Jobs Impact from Different Methods of Recycling Beverage Containers, available from: <http://www.container-recycling.org/assets/pdfs/reports/2011-ReturningToWork.pdf>

<sup>337</sup> Public Broadcasting Service (PBS), 2016, How Homeless Recyclers Make a Living Redeeming Recyclables, available from: <http://www.pbs.org/independentlens/blog/how-homeless-recyclers-make-living-redeeming-recyclables/>

The number of homeless people returning their containers in San Francisco is so high that a documentary<sup>338</sup> has been created to provide Californians with a detailed view into the journey of the homeless community, how they make an income out of the scheme and to improve the negative perceptions associated with the community's reliance on the scheme. The documentary shows a homeless man returning containers collected in bags attached to a shopping trolley. The homeless man received USD\$150 from that collection<sup>339</sup>.

Similarly, the cost of living in New York is expensive and hence those with low incomes have taken to rely on the scheme for their daily necessities. The act of sorting through other people's waste and collecting eligible containers holds negative perceptions in New York and has been termed as the act of "canning"<sup>340</sup>. The act of canning however can be very physically and emotionally challenging because of the associated logistical and travel issues, the interruptions cause by weather events, the safety issues related to digging through waste and the emotional impact of the general hostility encountered. To alleviate these challenges, a not-for-profit organisation called "Sure We Can" was founded in 2007. The organisation opened a licenced container return facility specifically for the homeless community. The objective of Sure We Can was to let recycling be a dignified way of life for the homeless. In 2011, Sure We Can stated that they had opened five locations since 2008. The centres include bathrooms, communal socialising and relaxation spaces, and collection and deposit refund areas that are designed to be effortless, safe and have no negative perceptions associated with the process. In 2013, it was stated that Sure We Can received 500,000 containers a month.

#### 6.1.4 Consumer Preference and Behaviour

Based on studies that have reviewed existing global schemes, some patterns in consumer preference and behaviour are:

- When refillable bottles are included in schemes, they become less attractive to consumers if, for example, they are marked with scheme labels and barcodes;
- Customer confusion is increased when there are large varieties in the types and sizes of the eligible and ineligible containers. A 2008 study for Germany stated that a survey undertaken by citizens found that there was confusion in relation to the products that had a deposit added to them and those that didn't. Residents were mostly confused by the close differences between the below:
  - Fruit juices and soft drinks containing fruit juice;
  - Dietetic beverages and similar drinks not exempt from the scheme; and
  - Flavoured alcoholic beverages that were included and those excluded, depending on their alcohol content<sup>341</sup>.
- At the beginning of a scheme, consumers tend to prefer to manually return containers to retailers. After a few years of operation, consumers tend to change their habits and primarily use automated collection points such as RVMs<sup>342</sup>; and
- Minimising sorting requirements for retailers is preferred by consumers as it means that they have to wait less time to receive their deposit refunds<sup>343</sup>.

<sup>338</sup> The film is named "Dogtown Redemption".

<sup>339</sup> Public Broadcasting Service (PBS), 2016, How Homeless Recyclers Make a Living Redeeming Recyclables, available from: <http://www.pbs.org/independentlens/blog/how-homeless-recyclers-make-living-redeeming-recyclables/>

<sup>340</sup> Narrative Content Group, 2013, For marginalized urban recyclers, a nonprofit with a can-do attitude, available from: <https://www.mnn.com/lifestyle/recycling/blogs/for-marginalized-urban-recyclers-a-nonprofit-with-a-can-do-attitude>

<sup>341</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>342</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>343</sup> Marsden Jacob Associates, 2018, A Model Framework for Container Refund Scheme in Tasmania.

Many different consumer behaviours have been noted in the different existing schemes. Some of these, as identified by different countries, are listed below:

- In Denmark, litter collected from parks is collected by newly arrived foreigners, retirees and the homeless<sup>344</sup>.
- In Sweden, agencies have reported that return rates are lower for urban areas compared to rural areas due to the 'laziness' of consumers in urban areas<sup>345</sup>.
- In Scotland, Irn Bru, who are beverage producers, operate their own container return scheme. The beverage containers were required to be in a variety of materials, including metal cans, PET and glass bottles. Irn Bru could not replace their glass bottles with other materials as many consumers claimed that the taste was better in the glass bottles<sup>346</sup>.
- When proposing the introduction of a scheme in the United Kingdom, it was suggested that consumers who remembered the old deposit systems placed on fizzy drinks bottles would be enthusiastic about a new scheme because nostalgia will kick in. It was also suggested that consumers might be enthusiastic when using the scheme as receiving money or a voucher would feel like a reward for recycling<sup>347</sup>.
- In Germany, the scheme, as well as other implemented policies, have led consumers to decrease their purchasing of reusable bottles. The elderly community of Germany are said to have a preference of purchasing single-use plastic bottles rather than refillable glass and metals as they are lighter in weight and easier for them to transport<sup>348</sup>.
- In New South Wales, Australia, one (1) in two (2) residents aged over 18, are said to have participated in the scheme. The scheme has also led to some positive habits in children. A 3-year old child won a litter reduction award for picking up containers every time he visited the beach with his family. He had developed a habit of collecting containers and returning them to his local container return facility<sup>349</sup>.
- In Vermont, 93% of surveyed citizens supported the existing scheme, and 80% said that they would like the scope of eligible containers to be expanded<sup>350</sup>.

Some negative consumer behaviours were suggested by agencies in Minnesota when a state scheme was being proposed in 2013<sup>351</sup>. The American Forest & Paper Association stated that a state scheme would add to the confusion of consumers who already participate in a mandatory kerbside recycling system. This was however argued against by the Californians Against Waste association that stated that customer confusion can be avoided by implementing a scheme with a comprehensive scope of eligible containers. Additionally, the Minnesota Beverage Association stated that a national scheme introduction would mean that 'scavengers' would start accessing the kerbside bins of residents to collect eligible containers. The association noted that kerbside scavenging was an issue associated with existing schemes in other American states, such as in California, and has created public health and nuisance issues. According to the association, scavenging has led to the overturning and emptying of bin contents on public streets.

<sup>344</sup> Bloomberg L.P., 2015, Finding Money in Copenhagen's Trash Cans, available from:

<https://www.citylab.com/solutions/2015/10/finding-money-copenhagens-trash-cans/412498/>

<sup>345</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>346</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>347</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>348</sup> Deutsche Welle, 2013, German consumers kick the can, available from: <https://www.dw.com/en/german-consumers-kick-the-can/a-16604691-0>

<sup>349</sup> Return and Earn NSW, 2020, 3 billion reasons to celebrate, available from:

[https://returnandearn.org.au/exc\\_news/3-billion-reasons-to-celebrate/](https://returnandearn.org.au/exc_news/3-billion-reasons-to-celebrate/)

<sup>350</sup> Minnesota Pollution Control Agency, 2014, Increasing recycling of beverage containers in Minnesota: Recommendations for a statewide recycling refund program.

<sup>351</sup> Minnesota Pollution Control Agency, 2014, Increasing recycling of beverage containers in Minnesota: Recommendations for a statewide recycling refund program.

## 6.2 Scheme Awareness

Before a scheme is implemented, it is important to ensure that consumers have an understanding of the scheme, its kaupapa - purpose, its benefits to them, and where and how they can return their containers<sup>352</sup>. A consumer education campaign should be considered to ensure that consumers understand the changes. It is recommended that education campaigns are presented by government departments so that the communicated information is consistent<sup>353</sup>. Communication of information should also meet a variety of accessibility needs including language translations (in Aotearoa, Te Reo Māori) and cultural considerations, such as the preference for face-to-face or communal knowledge-sharing. Other needs include options for the hearing and sight impaired.

Most effective schemes have accounted for scheme awareness as part of their operations. Costs published online for the scheme in British Columbia showed that in 2010, 5% of the total annual scheme cost which was CAD\$86million, was spent on consumer awareness<sup>354</sup>. Details on scheme awareness techniques applied in Australia and Europe are discussed below.

### 6.2.1.1 Australia

The advertising and education campaigns in Queensland were extensively organised, researched and implemented and targeted many different types of communities.

Before the scheme was implemented, the Managing Agency undertook consumer research to test how different campaign themes would be received and what would be most effective. Looking at the research outcomes and at behavioural economics, it was found that the largest campaign motivator was loss aversion. The advertising mediums used included television, radio, print and outdoor advertising. The tagline used was “There's cash in your containers”. The advertisements directed the audience to the official website where they could learn more about the eligible containers and sign up for a Scheme ID. 1,569 pieces of coverage were broadcasted, and 179.6million people were reached. The scheme had a public awareness goal of 80% by 2022. Art installations were also placed on a busy city street. A commissioned artist created a giant fish sculpture that was more than 3m high and 6m long and created out of 4,000 eligible containers.

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*In Denmark, advertisements are regularly shown on television, radio and written media. The advertisements portray the environmental benefits of recycling and remind consumers that they can receive their deposits back. Unredeemed deposits are permitted for use on information campaigns that intend to improve environmental awareness and increase the redemption rate*

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Between August and October 2018, the Managing Agency of the scheme partnered with Boomerang Australia, an environmental advocacy organisation, to educate the community on the scheme. Community forums were held in 34 locations allowing residents, local communities and businesses to attend, to ask questions and to learn about the benefits that the scheme can provide to their community. Forums were also held with the Torres and Cape Indigenous Councils Alliance to better understand their needs and to ensure that the campaigns engaged their community. In 2018, the scheme sponsored a four-day rugby event for the Aboriginal and Torres Strait Islander community called Murri Carnival. The sponsorship allowed the scheme's Managing Agency to advertise the scheme to the community.

Before the beginning of the scheme, campaigns focused on awareness. Once implemented, the focus of the campaigns changed to education. Social media was used to educate the public on the types of collections and return points available to them. Step-by-step videos of how to return and redeem

<sup>352</sup> Marsden Jacob Associates, 2018, A Model Framework for Container Refund Scheme in Tasmania.

<sup>353</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>354</sup> Martin Stewardship & Management Strategies Pty Ltd, 2011, Preliminary Report - Best Practice International Packaging Approaches.

deposits were placed on social media. A known comedian from Queensland was included in the videos to represent the scheme<sup>355</sup>.

In South Australia, an organisation known as Keep South Australia Beautiful (KESAB) has played a continuous role in the education of consumers. KESAB runs an education programme in schools called KESAB Wipe Out Waste where it educates students on the benefits of recycling, including the container return scheme. KESAB also educates students on the operations and benefits of the scheme at the recycling centre where all the collected materials from the scheme are processed for recycling. Additionally, KESAB runs annual Sustainable Communities Awards to reward the efforts of the community with recycling. In partnership with the South Australian Environment Protection Authority and Zero Waste South Australia, KESAB has undertaken education activities in remote areas, informing the indigenous community of the benefits of participating in the scheme<sup>356</sup>.

### 6.2.1.2 Europe

In Denmark, advertisements are regularly shown on television, radio and written media. The advertisements portray the environmental benefits of recycling and remind consumers that they can receive their deposits back. Unredeemed deposits are permitted for use on information campaigns that intend to improve environmental awareness and increase the redemption rate. According to a study undertaken in 2008, there has been no reported confusion of consumers on the purpose of the scheme and how they can redeem their deposits<sup>357</sup>.

Similarly, in Sweden, the scheme is regularly advertised on television and radio. A targeted education campaign has been developed for young people and applied through the below:

- A website set up specifically for the younger community. The website is 'www.pantamera.nu'.
- Campaigns are regularly run to educate and encourage the rangatahi - youth on recycling.

According to a study undertaken in 2008, the only confusion experienced by consumers that has been reported in Sweden is in relation to why containers that were bought internationally could not be returned and refunded<sup>358</sup>.

Education campaigns are not run in The Netherlands as the scheme is said to be well understood by the general population, especially since refillable bottles have been collected and the deposit refunded in The Netherlands since 1989<sup>359</sup>.

In the United Kingdom, there is general confusion on why the scope of material in kerbside recycling differs between different local authorities. A proposed national container return scheme would need an education campaign that does not add to the confusion of recycling materials in kerbside systems<sup>360</sup>.

## 6.3 Communication of Money Collected and Disbursed

The type of information available publicly to consumers, in relation to the finances of schemes, varies depending on the operations and decisions made by managing agencies and operators. Listed below are the types of information available publicly to consumers in different schemes:

<sup>355</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>356</sup> South Australia Environment Protection Authority, 2020, Testimonials, available from: [https://www.epa.sa.gov.au/environmental\\_info/container\\_deposit/testimonials](https://www.epa.sa.gov.au/environmental_info/container_deposit/testimonials)

<sup>357</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>358</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>359</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>360</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

- Like the schemes in most countries, deposit amounts in Norway are labelled on containers. Financial flows are annually and independently verified and publicly reported in Norsk Resirk, the Managing Agency's annual report<sup>361</sup>.
- In British Columbia, Encorp Pacific, the Managing Agency, publishes financial statements prepared in accordance with the standard Canadian accounting principles. Independent auditors undertake annual audits and verifications of the financial statements. Material and financial flows are tracked and made transparent. Financial statements and annual reports have been published publicly since 2001<sup>362</sup>.
- The Managing Agency in Denmark releases detailed reports yearly. Financial data is not assessed by the Managing Agency but by an independent accounting firm, which provides the Managing Agency with summary reports. This is because the Managing Agency includes representatives from Carlsberg, a large beverage producer and other beverage producers did not want sales data to be visible to its competitor. The deposit amount is labelled on eligible containers and is located either on the containers or on self-adhesive labels placed on the containers<sup>363</sup>.
- In Sweden, the deposit amount is shown on eligible containers, however financial flows are not available as the Managing Agency has chosen not to publish the information<sup>364</sup>.
- Similarly, financial flows and reporting are not made publicly available in The Netherlands<sup>365</sup>.
- In Germany, there is no legal obligation to report on the collection and recycling rates. This was stopped after consumers commented negatively on the level of unredeemed deposits<sup>366</sup>.
- In Queensland, an annual financial report is published by COEX (a not-for-profit organisation – see Section 14 for further discussion) which outlines the highlights and outcomes of the previous year's operations, outcomes of audits and improvements, case studies and information on customer experiences and a summary of the financial flows of the previous year<sup>367</sup>.

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*it is important to ensure that consumers have an understanding of the scheme, its purpose, its benefits to them, and where and how they can redeem their containers. A consumer education campaign should be considered to ensure that consumers understand the changes.*

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## 6.4 Roles and Responsibilities

The roles and responsibilities of consumers are often communicated to consumers in the scheme awareness campaigns such as online resources, education materials and advertisements.

Consumers however also benefit from understanding the roles and responsibilities of the other stakeholders in the scheme. In most schemes, the roles of the different stakeholders, such as Managing Agencies, government departments and retailers are outlined online. Depending on the scheme, the Managing Agency or government departments are responsible for managing consumer queries.

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<sup>361</sup> Martin Stewardship & Management Strategies Pty Ltd, 2011, Preliminary Report - Best Practice International Packaging Approaches.

<sup>362</sup> Martin Stewardship & Management Strategies Pty Ltd, 2011, Preliminary Report - Best Practice International Packaging Approaches.

<sup>363</sup> Martin Stewardship & Management Strategies Pty Ltd, 2011, Preliminary Report - Best Practice International Packaging Approaches.

<sup>364</sup> Martin Stewardship & Management Strategies Pty Ltd, 2011, Preliminary Report - Best Practice International Packaging Approaches.

<sup>365</sup> Martin Stewardship & Management Strategies Pty Ltd, 2011, Preliminary Report - Best Practice International Packaging Approaches.

<sup>366</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>367</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

In the Australian Capital Territory, a government department named Australian Capital Territory NoWaste has been created to specifically be responsible for overlooking the regulation of environmental operations, including the regulation of the container refund scheme. Australian Capital Territory NoWaste is responsible for investigating consumer complaints<sup>368</sup>. In Queensland however, the Managing Agency is responsible for communicating with consumers and managing their questions and complaints. This is discussed further in Section 6.5.

## 6.5 Communication with Scheme / Depot / Managing Agency

As stated in Section 6.4, the responsibility of managing consumer questions and complaints is typically undertaken by the Managing Agency, or on the government department responsible for overlooking the scheme.

In Queensland, the Managing Agency, COEX, has set up a dedicated contact centre to ensure that consumers can efficiently communicate with the scheme. The contact centre is contactable seven (7) days a week and aims to support consumers with their questions. Staff are trained to support with common queries and complaints. Between the start of the scheme and 30 June 2019, only 1% of the 79,000 queries received, were complaints.

Additionally, COEX have set up a question and answers library online to communicate common queries through other mediums. This list is continuously updated as the scheme progresses and improves. Geo-targeted marketing on social media platforms is also used to communicate when there are changes in the operations of the scheme in local communities such as locations of new collection points.

To ensure client needs are being met, an internal audit was undertaken by KPMG to review the complaints handling processes of COEX. Where issues were identified, COEX reviewed their policies and systems to improve their procedures with customers<sup>369</sup>.

For the benefit of the community, the Managing Agency of the Californian scheme, CalRecycle has created an extensive online website for the scheme that includes information often required by consumers. The website includes a lot of resources, such as education material on eligible containers, a 'frequently asked questions' page, and a map that consumers can use to find their local collection and refund point<sup>370</sup>.

## 6.6 The Aotearoa New Zealand Context

The consumer is the most important element of the NZ CRS as the scheme is to be developed for the consumer. As has been discussed in this section, consumers automatically participate as purchasers of beverages, however not all participate in collecting and returning eligible containers. The collection and returning of eligible containers are dependent on several factors including, for example, the incentives provided (e.g., deposit level), the education and marketing delivered by the scheme, and the convenience of participation.

In a survey undertaken by ConsumerNZ between February and March 2020<sup>371</sup>, 2,114 New Zealanders over the age of 18 were surveyed (53% female, 47% male) to gauge views on recycling and support for a container return scheme. Of those surveyed, 78% were in favour of a scheme with 10% opposed with a further 12% undecided. Of note, 68% of those surveyed earning below NZD\$25,000 per annum (174 respondents of the 2,114 total survey respondents) were reported to support the scheme which is slightly lower than the average of 78% as noted above. This is an important consideration as the NZ CRS

<sup>368</sup> The Centre for International Economics, 2018, NSW Container Deposit Scheme - EPA's fees for monitoring, compliance and approving containers, Draft Public Report.

<sup>369</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>370</sup> CalRecycle, 2020, available from <https://www.calrecycle.ca.gov/BevContainer/Consumers/>

<sup>371</sup> ConsumerNZ Beverage Container Return Scheme Survey: Key Results 2020



needs to provide a convenient and accessible service to all New Zealanders and so the design and NZ CRS implementation stage will need to give effect to design elements that will facilitate this (e.g., number and location of drop-off points and deposit amount to encourage consumer participation in the scheme). Further, 72% reported that they were very likely to use the scheme, with only 8% unlikely to do so. As has been reported from across the many global container return schemes, consumer convenience and accessibility to container return facilities have been key design considerations. The results of the ConsumerNZ survey further support this with 79% of those surveyed reporting convenient drop-off points (i.e., container return facilities) and 67% reporting the need for easy to understand information regarding what containers the scheme covers as two (2) key factors for the success of a NZ CRS.

In terms of consumer preference to what type of containers should be included in the NZ CRS, most of those surveyed (64%) noted that all containers made of plastic, glass and metal should be included in the NZ CRS, with drop in support for plastic and glass at 15%, plastic only at 6% with the remaining 15% wither noting other types of materials or were undecided (Figure 20).



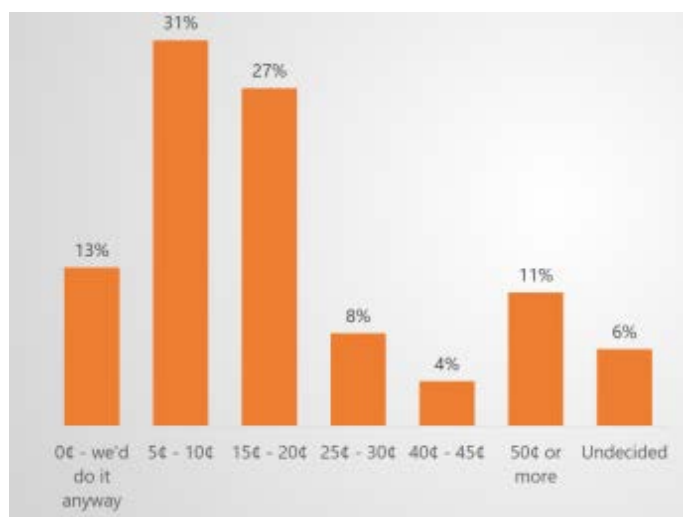
**Figure 20: What type of container should the New Zealand Container Return Scheme include?**

Considering the convenience and accessibility of a NZ CRS, of those surveyed 70% noted that supermarkets would provide the most convenient place to return scheme eligible containers followed by 63% at collection depots (e.g., community recycling centres and recycling facilities), 40% to other retail outlets (e.g., bottle stores and dairies) with the remaining 8% noting other locations or would not bother returning the containers (Figure 21).



**Figure 21: Support for New Zealand Container Return Scheme facilities?**

Further considering the convenience and accessibility of a NZ CRS, survey respondents also provided responses to what the minimum deposit amount should be to encourage New Zealanders to use the scheme. Of the 2,114 respondents surveyed, 58% (more than half of respondents) considered an amount up to NZD20-cents would be sufficient. This included 13% of respondents who noted they would do it anyway, 31% between a NZD5-cent and NZD10-cent deposit and 27% between NZD15-cent and NZD20-cent deposit (Figure 22). Interestingly, the ConsumerNZ survey noted there were no differences in responses by annual household income.



**Figure 22: What should the minimum deposit be for a New Zealand Container Return Scheme?**

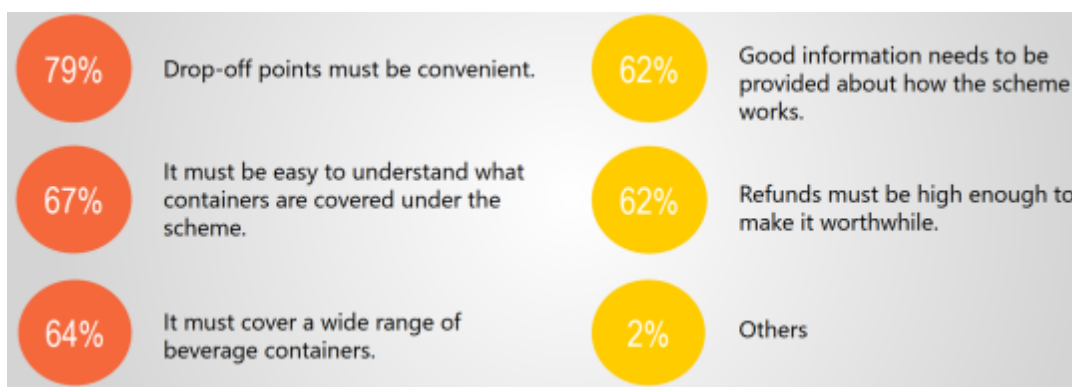
The ConsumerNZ survey also asked the 2,114 survey respondents how they would like to receive the deposit. The options provided were reflective of those offered across the global container return schemes, with 40% of respondents supporting cash, 21% direct payment to a bank account, 16% voucher, 6% charity and the remaining 17% reporting other methods, all of those methods noted or no preference to the method (Figure 23).



**Figure 23: What is the preferred deposit return method for a New Zealand Container Return Scheme?**

Taking the above key design factors into consideration and the overall results of the ConsumerNZ survey, the following key design factors were reported to ensure the NZ CRS works well for the consumer (Figure 24) (see Appendix G for the key survey results):

- Convenient drop-off locations (79%);
- Clarity regarding what containers are included in the scheme (67%);
- Inclusion of a wide range of beverage containers (64%);
- Easy to understand scheme information (62%);
- Deposit amount needs to be high enough to make it worthwhile for consumers to use the scheme (62%); and
- Other matters for consideration (2%).



**Figure 24: Key factors in the success of a consumer focussed New Zealand Container Return Scheme?**

Following the results of the above discussed survey, ConsumerNZ carried out a further survey in June 2020 of 1,516 New Zealanders aged 18 and over to gauge the reasons why a consumer may oppose a scheme or be undecided and views on whether a consumer would prefer to have visibility of the deposit and scheme administration costs such as on shopping receipts (Appendix G). Overall, the survey reported 70% support for a NZ CRS which was down slightly on the February/March 2020 survey which reported 78% support and, which as reported by ConsumerNZ, may be in part have been due to the different question wording between the surveys. As reported, consumers in the second survey were provided with information explaining that the NZ CRS would mean paying a refundable deposit fee (approximately NZD20-cents) at the point of purchase together with a non-refundable scheme fee (approximately NZD5-cents to NZD7-cents). The results showed that providing information about the scheme costs did not lead to a significant drop in support for a NZ CRS with the majority of respondents remaining in favour of a scheme and with no significant differences in responses based on household income.

Of the 15% of the June 2020 respondents that did not support or 16% that were undecided whether to support a NZ CRS (noting 70% supported the scheme), respondents noted, for example, that they were unsure whether they wanted to pay a non-refundable fee, or preferred to use the kerbside recycling bins, or were not sure if they wanted to pay a refundable deposit, or needed more information before they could make a decision (Appendix G).

With regards to transparency to consumers of scheme costs on, for example, shopping receipts, 69% believed it was somewhat important or very important for the refundable deposit fee to be shown on shopping receipts and 62% believed it was somewhat important or very important for the non-refundable scheme fee to also be shown on shopping receipts.

## 6.7 Summary of Key Findings

The outcome of the above research show that while all consumers automatically participate in a container return scheme as purchasers of single-use beverage products, the returning of eligible scheme containers and refunding of deposits is dependent on several key factors:

- Incentive provided to drive behaviour change and make it worthwhile– deposit value;
- Consumer convenience and accessibility (Section 6.1.2);
- Community engagement and employment opportunities (Section 6.1.3); and
- Scheme communication and engagement with consumers (Section 6.2).

In addition to direct scheme engagement, the benefits provided by a container return scheme to consumers has wider reach including community pride through the reduction of litter and an increase in employment opportunities including community groups.

Further, the results of the ConsumerNZ surveys gauging New Zealanders views on recycling, support for a container return scheme and transparency of scheme costs, found that a NZ CRS design that provided for convenient drop-off facilities (e.g., supermarkets and collection depots), provision of clear scheme information, inclusion of a wide range of beverage container material types (i.e., plastic, glass, metal), a range of options to receive the deposit (e.g., cash, direct to bank account, voucher and donation) and a deposit amount that was high enough to encourage consumer participation in the scheme (i.e., up to NZD20-cents) were the most important factors to support the success of a NZ CRS. Additionally, the survey results indicated significant consumer support for scheme costs to be transparent to the consumer through, for example, itemisation of scheme costs on shopping receipts (Section 6.6). Each of these factors will be discussed in further detail in the following sections.

The following conclusions are also drawn from the research:

- As the receivers of the deposit refunds from eligible containers, consumers can experience economic benefits (Section 6);
- Benefits experienced by a local community are related both to the increase in income, increase in employment and reduction in litter (Section 6);
- Working towards a high return rate of containers inherently benefits consumers by ensuring that they are encouraged to return their containers (Section 6.1.1);
- Convenience, as part of the consumer experience, is key to the engagement of consumers and to ensuring that costs on consumers are minimised (Section 6.1.2);
- A benefit of container return schemes is that they have provided an additional income source to consumers (Section 6.1.3);
- If the proposed deposit refund amounts for eligible containers are too low, consumers may not be incentivised enough to return their containers - the incentive increases with increasing deposit refund value (Section 6.1.3);
- It is important to ensure that consumers have an understanding of the scheme, its kaupapa - purpose, its benefits to them, and where and how they can return their containers. A consumer education campaign should be considered to ensure that consumers understand the changes (Section 6.2);
- Communication of information should also meet a variety of accessibility needs including language translations (in Aotearoa, Te Reo Māori) and cultural considerations (Section 6.2);
- The roles and responsibilities of consumers are often communicated to consumers in the scheme awareness campaigns such as online resources, education materials and advertisements (Section 6.4);
- The responsibility of managing consumer questions and complaints is typically undertaken by the Managing Agency, or on the government department responsible for overlooking the scheme (Section 6.5);
- Of New Zealand consumers surveyed between February and March 2020 (Section 6.6):
  - 78% were in favour of a NZ CRS with 72% reporting that they were very likely to use the NZ CRS.
  - 79% reported convenient drop-off points (i.e., container return facilities) and 67% reporting the need for easy to understand information regarding what containers the NZ CRS covers;
  - 64% noted that all containers made of plastic, glass and metal should be included in the NZ CRS;
  - 70% noted that supermarkets would provide the most convenient place to return scheme eligible containers followed by 63% at collection depots (e.g., community recycling centres and recycling facilities), 40% to other retail outlets (e.g., bottles stores and dairies);

- 58% (more than half of respondents) considered a deposit amount up to NZD20-cents would be sufficient;
- 40% of respondents supporting cash, 21% direct payment to a bank account, 16% voucher, 6% charity and the remaining 17% reporting other methods; and
- 69% believed it was somewhat important or very important for the refundable deposit fee to be shown on shopping receipts and 62% believed it was somewhat important or very important for the non-refundable scheme fee to also be shown on shopping receipts.

Consequently, the success of a bespoke NZ CRS design will be underpinned by ensuring the scheme is designed to actively engage consumers (i.e., a deposit value that incentivises consumers to engage in the scheme) whilst ensuring that convenience and accessibility are key design foundations.

## 6.8 Summary of Design Feedback Received

The following table provides a high-level summary of the feedback received from the Scheme Design Working Group (SDWG) members after reviewing the section information. As many suggestions as possible have been incorporated but the NZ CRS Project Team acknowledge that the wide range of views expressed meant not every edit could be accepted. The NZ CRS Project Team is grateful for those who have provided feedback and where possible these have been used to provide further clarity and context throughout this section and to identify areas requiring further assessment during the NZ CRS implementation stage (Section 17).

<b>The Consumer Feedback – High-Level Summary</b>	
<b>Areas for further Investigation</b>	
Adjacent industries required to support a CRS (see Section 17 for further discussion).	Clear communication to consumers, including communicating their individual impact, what happens to recovered containers, and the differences between refillables and recyclables (see Section 17 for further discussion).
How refillables and the higher actions of the waste hierarchy will be incentivised (see Section 17 for further discussion).	Regional development implications (see Section 17 for further discussion).
How the collection network preferred for consumers will be realised (see Section 14 for further discussion).	The framework for transparent ongoing data collection, considerate of commercial sensitivities (see Section 14 and Section 17 for further discussion).
Policy considerations and framework for funding and how local government and small territorial authorities can be supported in establishing the scheme (see Section 13 for further discussion).	Implementation timetables (see Section 17 for further discussion).
If CRS recommendations have changed post-COVID-19 (see Section 17 for further discussion).	Barriers to adoption and innovation of technology (see Section 17 for further discussion).
An analysis of international standards (see Section 13 for further discussion).	

<b>The Consumer Feedback – High-Level Summary</b>	
	Incentives for consumers and their relative importance, such as collection network accessibility, convenience, deposit value, high collection targets, purchasing decisions, environmental impact and availability of kerbside recycling (see Section 17 for further discussion).
Clear explanation on the range of costs to consumers, in dollar terms, and the price impacts on numerous containers and multipacks rather than one (1) container (see Section 11 for further discussion).	Refillables creating more job opportunities than one-way packaging (see following sections and Section 17 for further discussion).
<b>Opposing Views</b>	<b>Do not Support the Following</b>
Cash refunds: <ul style="list-style-type: none"> <li>Members in support state that cash maintains scheme accessibility for low income and homeless consumers and incentivises environmental clean-ups.</li> <li>Members against state that vouchers or cash cards should be used instead. Some have suggested putting a cap on cash refunds to reduce fraud risks.</li> </ul>	The idea that a high deposit value is the main incentive for consumers.
<b>Support the Following</b>	
The Managing Agency and Government to focus on convenience, engagement, accessibility including for disadvantaged communities, ensuring all consumers can redeem their deposits.	A strong communication package for a variety of audience, including consumers in remote and urban areas and international visitors.
A single Not-For-Profit Managing Agency in order to have financial transparency for the public and producers.	Options other than return-to-retail to ensure a sufficient number of container return facilities.
Ensuring flexibility to allow community groups to set up depots.	

## 6.9 Component(s) to be Included in the New Zealand Container Return Scheme Design

Taking the above key findings into account including feedback from stakeholders involved in the NZ CRS design, the Project Team are of the view that the design of a bespoke NZ CRS needs to be focussed on consumer convenience, engagement and accessibility.

The Project Team are also of the view that the following consumer components will be included in the NZ CRS design.

- The Managing Agency will be responsible for providing clear and accessible information to ensure consumers have a good understanding of the scheme, its kaupapa - purpose, its benefits to them, and where and how they can return eligible container.

- The reason why this is good for the NZ CRS and Aotearoa New Zealand is to provide consumers with clear scheme information to support individuals to make informed decisions and choices whilst providing clarity on which single-use beverage containers are included in the scheme and which are not.
- The Managing Agency will be responsible for ensuring consumers have access to return their eligible containers in a secure, convenient and efficient manner with minimal wait and transaction times in keeping with best practice and at the same time ensure the return facilities are cost-effective and financially viable. Based on learnings from overseas, feedback from the design process and the outputs from financial modelling it is proposed that the NZ CRS initially establish approximately 415 (i.e., a projected population of 5.213million as at 2023 and a ratio of 12,500 people per container return facility) registered container return facilities across Aotearoa New Zealand noting that each of the approximately 415 registered sites are anticipated to have informal drop-off points located to increase customer convenience and provide additional volumes of containers to improve financial viability. The NZ CRS Managing Agency will be required to monitor the performance of each geographical area such as containers returned as a proportion of what is available in the area and take appropriate action as required. This action would include working with container return facilities, establishing more return sites and increasing awareness. It is further recommended that no later than 9-months before the scheme commences a final review is undertaken by the regulatory authority to confirm if the establishment of approximately 415 container return facilities is still appropriate.
  - Ensuring sufficient access to collection points throughout Aotearoa New Zealand is important to ensure the NZ CRS provides a service to all New Zealanders regardless of where they reside (e.g., rural, urban, city) whilst also providing consumers a range of locations that they can access and use that complements their day-to-day activities. At the same time, it is important that the collection point sites are financially viable and cost-effective.
- Container return facilities exist in each region that include after-hours options (e.g., open after 5pm) and weekends to enable customers to conveniently return their containers and obtain their deposit refunds (noting container return facility opening times may be influenced by region specific consenting requirements, for example, noise control).
  - The benefit of this approach is to provide consumers with a range of times to enable customers to conveniently return and redeem their containers, for example, after normal work hours.
- The Managing Agency will give effect to ensuring that container return facilities are located strategically to promote customer convenience (e.g., supermarkets, petrol stations, co-located with community recycling facilities) and access points (e.g., transportation routes).
  - The benefit of this approach is to provide consumers with a convenient service that individuals can easily interact with while supporting, for example, local businesses (e.g., supermarkets, retail stores).
- Container return facilities must provide for safe access (e.g., ramps versus steps) to a wide range of customers.
  - The reason why this is good for Aotearoa New Zealand is to ensure that all consumers have the opportunity and ability to access and interact with the NZ CRS.
- A flat-rate minimum deposit value will be applied to all eligible containers to ensure consumer engagement and make it worth their while and drive the desired behaviour change.
  - The reason why this is good for Aotearoa New Zealand is that a flat-rate deposit will simplify the scheme by providing equal incentive to consumers to return all containers, ensuring the scheme is fair to all producers and is simpler for the Managing Agency to administer. This avoids favouring the return of one container over another.

- Container refund options must include cash, electronic funds transfer, supermarket voucher (including, for example, a 2-year expiration date) and donation. The scheme Managing Agency will be empowered to have flexibility to expand the range of refund options such as a scheme credit system, loyalty card and gift cards). Alternative refund options must be supported by robust information (e.g., consumer surveys) and in consultation with the scheme Governance Board and the Government department responsible with scheme oversight.
- The benefit of providing New Zealanders with a range of options to receive the NZ CRS deposit refund ensures the scheme is fair to all and provides consumers with choice depending on current situations (e.g., job status, involvement in charities).
- The Managing Agency will be responsible for the establishment and ongoing implementation of a NZ CRS education and awareness plan including the provision of educational resources suitable for use in curriculum settings (e.g., interactive NZ CRS web portal).
  - The benefit of providing these NZ CRS educational resources to Aotearoa New Zealand is the ability to create increased social good within communities by encouraging and facilitating improved social connections between and within communities that also directly and indirectly drives awareness and support for the NZ CRS. Additionally, these educational resources may facilitate wider opportunities such as the establishment of a waste and resource management school curriculum.



## SECTION 7: MATERIAL PROCESSING FACILITIES

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## Section 7 Material Processing Facilities

As discussed in Section 4, eligible scheme containers are commonly received for processing at either a centralised and dedicated scheme Material Consolidation Facility (MCF) or at an existing Material Recovery Facility (MRF) processing kerbside and commercial recyclables. Additionally, eligible containers may also be recovered from kerbside general refuse collections from, for example, waste transfer stations. The differences between these facilities are based on several predominant pathways by which eligible scheme containers are returned and recycled by the consumer. For clarity, the MCF only receives and processes eligible scheme containers whereas the MRF is a sorting facility that extracts eligible scheme material from mixed recycling inputs.

The relationship between the respective processing facility and each of these pathways are listed below, however both the MCF and MRF receive, sort, verify, process and bulk eligible scheme containers for recycling and/or re-processing. It should also be noted here that a proportion of eligible containers may also be lost to the NZ CRS scheme through consumer disposal to the environment (i.e., litter).

### 1. Material Consolidation Facility (MCF) Pathway

- Consumer returns eligible scheme material to a container return facility for the appropriate refund. Scheme material is sorted, verified and processed by one or more centralised scheme Material Consolidation Facility (MCF).

### 2. Material Recovery Facility (MRF) Pathway

- Consumer disposes eligible scheme material into the kerbside recycling service and does not receive a refund. Scheme material is sorted, verified and processed by an existing Material Recovery Facility (MRF).

### 3. General Refuse Processing Facility Pathway

- Consumer disposes eligible scheme material into the kerbside refuse service and does not receive a refund. Scheme material is commonly disposed of to landfill unless processes and procedures are in place at, for example, waste transfer stations to recover scheme eligible material.

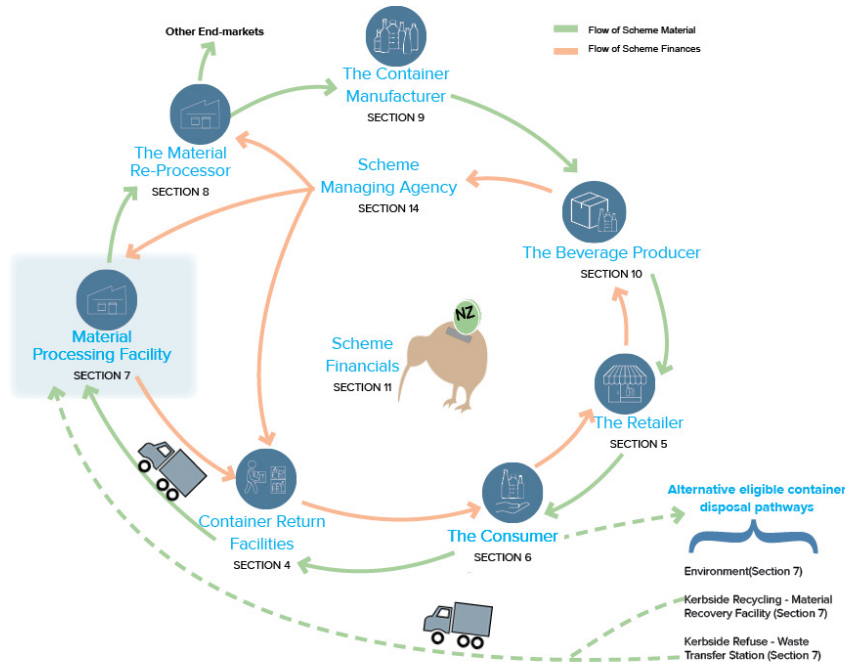
### 4. Disposal to the Environment Pathway

- Consumer disposes eligible scheme material to the environment (i.e., litter) and does not receive the refund.

Section 7 will discuss items 1 – 3 in the above list including the processes by which global container return schemes have established processes to manage eligible scheme material returned and collected via these three (3) pathways (including ensuring recovered eligible containers meet the specific scheme eligibility criteria in order to receive a deposit refund). However, the main focus of Section 7 will be the scheme Material Consolidation Facility (MCF) as the centralised dedicated facility to receive, sort, verify, process and bulk eligible scheme containers with discussion provided on the other processing facilities as appropriate.

For clarity and for the purpose of the NZ CRS design, the facility as noted in item 1 above that acts as the centralised scheme facility, receiving, sorting, verifying, processing and bulking is termed the scheme 'Material Consolidation Facility' (MCF). For the purpose of the NZ CRS, the scheme MCF could be created via new build construction, contracting a third party to carry out the required processing activities or by converting existing infrastructure (e.g., Territorial Local Authority owned/contracted resource recovery infrastructure). Additionally and for the purpose of the NZ CRS design, the Material Recovery Facility (MRF) as noted in item 2 above is the existing facility currently receiving local council kerbside recycling materials (e.g., VISY Auckland) and which will receive eligible scheme material which has been placed by consumers into the kerbside recycling bins. Further, for the purpose of the NZ CRS design, the facility noted in item 3 above is the existing facility receiving the general refuse waste (e.g., waste transfer stations) that may receive eligible scheme containers disposed of by consumers into general waste bins. Item 4 'disposal to the environment' is not discussed further in this section as it is

accepted that in all container return schemes, a proportion of eligible scheme containers will be lost to the scheme with the Managing Agency responsible for minimising this proportion to encourage and maintain high container return rates. The inclusion of any of the above-mentioned facilities into the NZ CRS design will require the development and implementation of, for example, suitable fraud controls, audit and compliance measures to mitigate fraudulent activities.



Taking the above into consideration, the following schematic illustrates the broad mechanism of a NZ CRS design, which includes the roles and relationships of the respective scheme participants and the broad movement of the scheme financials (e.g., the deposit, handling fee, scheme fees and, where appropriate, the Advanced Material Recycling Fee). For clarity the scheme fee refers to the handling fees paid to container return facilities and processors as well as the administrative costs incurred by the Managing Agency to operate and maintain the performance of the scheme. As with many container return schemes, scheme participants (e.g., Material Processing Facility, Consumer, Retailer) cannot be considered in isolation of one another, as scheme success is underpinned by integrated and interconnected relationships coordinated and fostered by a Managing Agency.

For the purpose of the below schematic, only the MCF is shown as the centralised dedicated processing facility, however it is acknowledged that eligible scheme materials can be returned to the scheme via a MRF or a general refuse processing facility, or alternatively lost to the scheme via disposal to the environment or landfill.

Focussing on the scheme MCF, the facility’s role and responsibility in the functioning of a container return scheme is to receive scheme material from container return facilities (Section 4) then separate and recover this material (e.g., plastic grading) using a combination of manual and mechanical separation and prepare it for transport (including consolidation through baling or transport management as appropriate) to Material Re-Processors and/or direct to end markets (Material Re-Processor - Section 8). Consequently, scheme MCFs play an important role in receiving and processing eligible containers originating from consumers returning containers to a scheme container return facility, such as a manual collection depot, RVM or return-to-retail (i.e., consumers receive the relevant deposit refund).

Similarly, MRFs play an important role in providing a processing service to commercial operators and local councils by receiving and sorting commercial and kerbside collected recyclables which may also contain eligible scheme containers disposed of by the consumer. In the case of the MRF, this facility receives eligible containers which have not been redeemed by the consumer for the relevant refund. As a result, the unclaimed consumer deposit refund on MRF processed eligible containers is typically managed via a revenue sharing arrangement established between the MRF and the local council (i.e., provision of kerbside recycling collection service). A clear differential is that both eligible and ineligible scheme material is received, sorted, processed and bulked at a MRF for transport to end-markets and/or re-processors. Further, as required by container return schemes, MRFs must first verify the eligible containers in order to claim for the appropriate refund and therefore must put in place measures (e.g., clear separation between eligible container verification and processing of ineligible containers) that are approved by the scheme Managing Agency to mitigate against any fraudulent activities (e.g., claiming a deposit for ineligible containers).

Therefore, the scheme design will fundamentally determine the role and associated responsibilities placed on the MCF and the MRF. The revenue sharing arrangements may be subject to contractual arrangements between the affected parties, for example, council and MRF operators. The Managing Agency will have interest in ensuring these agreements are in place for the purpose of fraud mitigation.

It is important to note here that where case study examples are provided in the following sections, the specific scheme facility term will be used to reflect either the facility responsible for only eligible scheme material (i.e., scheme MCF), or, responsible for kerbside collected material and eligible scheme material (i.e., MRF).

## 7.1 Container Counting Methodology

The method by which eligible containers are counted and verified differs by scheme, with some schemes requiring automated counting and verification at each point a container is handled (e.g., container return facility, material processing facility) to ensure an auditable and robust tracking system is in place to identify potential system fraud. In comparison, other schemes employ a combination of automated and manual counting at container return facilities (e.g., manual collection depots) which may be, for example, a function of providing a consumer-friendly experience (e.g., direct interface with return facility employees) and supporting economic growth through the establishment of manual return facilities (i.e., local employment).

As discussed in Section 4, the first stage of container counting occurs once the consumer returns the empty eligible containers in order to claim the appropriate deposit amount. At this stage, the collection facility receives the scheme material and is responsible for ensuring accurate records of eligible containers are kept that verify the number of containers returned at any point in time. This is particularly the case in South Australia where collection points are reimbursed primarily on a weight-based system and so accurate records are needed to ensure weight-based calculations are in-line with the number of containers collected. Other schemes employ an additional count verification process at the MCFs whereby containers are re-counted and then immediately sorted into material type based on commodity markets (e.g., clear PET, aluminium, LPB).

Further, the research suggests that a secondary counting and verification process is generally included in a container return scheme and undertaken at a centralised dedicated processing facility (e.g., scheme Material Consolidation Facility [MCF]) to ensure only eligible containers are entitled to a deposit refund. Therefore, the matter of counting eligible containers is an important design element for the NZ CRS and one which has considerable influence in ensuring, for example, accurate transfer of monies, minimisation of fraud and tracking scheme efficiency (i.e., scheme return rates). Taking this into consideration, and acknowledging the existing Aotearoa New Zealand resource recovery infrastructure including existing MRFs and local council owned/contracted facilities, the establishment of a network of material processing facilities is recommended to support the geographic spread of

Aotearoa New Zealand’s population (e.g., rural, urban, remote communities) and to recognise the variability in access to and provision of national resource recovery infrastructure.

Taking on board the research findings, the NZ CRS would benefit from a distribution of scheme MCFs across the North and South Island recognising the respective population spread (see Section 7.7 for further discussion). Taking on board stakeholder feedback each region in Aotearoa New Zealand (i.e., 16 regions) will have a dedicated MCF. There may be a requirement for more than one (1) MCF in a region where it is demonstrated that an additional MCF(s) would lead to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. It is envisaged that establishment of the scheme MCF network would include existing Territorial Local Authority (TLA) owned/contracted resource recovery infrastructure (e.g., resource recovery centres) which could be upgraded/converted to become an expansion of the NZ CRS MCF network.

The following sections provide clarity and a brief discussion of the counting methodologies employed by the scheme material processing facilities, namely the centralised dedicated scheme Material Consolidation Facility, the Material Recovery Facility and the General refuse Processing Facility.

### Material Consolidation Facility (MCF)

The method by which a scheme Material Consolidation Facility (MCF) verifies eligible containers differs by scheme, however typically eligible containers are pre-sorted and counted by the container return facility (e.g., RVM, manual collection depot) into material type (e.g., aluminium, LPB, plastic). Material is then bulked and transported to the appropriate scheme MCF for further counting either through an automated actual count, or via a weight-based approach to estimate the number of containers. Typically, most schemes set out the sorting requirements for container return facilities to minimise if not eliminate any further sorting requirements at the MCF. Consequently, alignment is needed between the scheme MCF and the collection facility to minimise the potential for double handling or reworking of the collected materials. Further, the ability of a scheme MCF to undertake automated actual counts is determined by the scheme design and the container count method (e.g., barcode scanning, shape verification) which in turn determines the form eligible containers are received (e.g., ‘whole’ containers with scheme ID intact [e.g., barcode, logo]).

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*Eligible container count methodology is an important design element and one which has considerable influence in ensuring for example accurate transfer of monies, minimisation of fraud and tracking scheme efficiency*

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### Material Recovery Facility (MRF) and General Refuse Processing Facility

In cases where the consumer disposes of the eligible container into the kerbside recycling collection (i.e., Material Recovery Facility [MRF]) or via general refuse without redeeming the deposit refund, eligible scheme containers are processed and recovered by the relevant processing facility (MRF, general refuse processing facility) with the refund issued dependent on the eligible container meeting the scheme eligibility criteria (e.g., clean, barcode and/or scheme logo intact and legible). Given the current sorting processes at MRFs and general refuse processing facilities (e.g., waste transfer stations), it is probable that these facilities will need to make operational changes (e.g., the addition of new processing, sorting and storing infrastructure) to ensure eligible scheme containers can be correctly measured and inputs and outputs correctly reported to the scheme Managing Agency.

The following case study examples from New South Wales and Queensland provide detail on how each scheme has established its own unique way of collecting, recovering and counting eligible scheme containers. It is important to note here that the New South Wales container return scheme uses existing Material Recovery Facilities (MRFs) to carry out processes such as the sorting, verification, processing and baling of scheme eligible containers, whilst also processing kerbside collected and commercial recyclable material. As such, the New South Wales container return scheme processing facility provides the services as for a standalone scheme MCF and a MRF. The facility does this by accepting scheme eligible containers in a separate area within the facility to minimise the possibility of ineligible

containers contaminating the eligible containers, and consequently minimise the possibility of fraud. In comparison, the Queensland container return scheme uses a dedicated scheme MCF (termed Processor) to fulfil several roles including provision of collection infrastructure to container return facilities (termed container refund points in Queensland), verify the number of containers received from these facilities and prepare the containers for sale, and manage the transfer of sold materials to the purchaser. Each of these case study examples is discussed further in the following sections.

### 7.1.1 New South Wales Case Study

The New South Wales Container Deposit scheme has provided scheme participants with clear information setting out the Scheme Coordinators expectations as well as those of the Environment Protection Authority.

In the case of a New South Wales processing facility, specific protocols are established which enable the facility to select from approved methods to assess the number of processed eligible containers, acknowledging processing infrastructure (e.g., manual or automated processing).

The following sections provide a discussion of the processes by which New South Wales processing facilities undertake counting of eligible scheme containers.

#### 7.1.1.1 New South Wales Scheme Material Processor

The New South Wales central scheme material processor (i.e., Material Consolidation Facility [MCF]) is responsible, for example, processing, verifying the number of containers received from container return facilities and preparing the containers for sale at the Eastern Creek container sorting facility. The current New South Wales scheme material processor is a joint relationship between TOMRA and Cleanaway which also acts as the scheme Network Operator responsible for setting up and running the container return point network and meeting scheme targets (e.g., container return targets)<sup>372</sup>.

#### 7.1.1.2 New South Wales Material Recovery Facility

As discussed in Section 7.1, the Materials Recovery Facility (MRF) operator in New South Wales is an important part of the Return and Earn container deposit scheme as these facilities provide the point at which scheme eligible containers collected within kerbside recycling are received, processed and made market ready for sale. As per the New South Wales legislation<sup>373</sup>, a New South Wales MRF is defined as the following:

- *a person who carries on a business that is or includes the processing for reuse or recycling of domestic waste designated for recycling and collected by that or any other person during the course of domestic waste management services and who:*
- *holds an environment protection licence under the Protection of the Environment Operations Act 1997 authorising the processing of the waste (otherwise than by thermal treatment) at specified premises, or*
- *is approved in writing by the EPA as a material recovery facility operator for the purposes of this Part, or*
- *any other person of a class prescribed by the regulations.*

To determine the amounts payable to MRF operators processing refunds under the New South Wales deposit scheme, the Material Recovery Facility Processing Refund Protocol and the Bottle Crushing Service Operator Processing Refund Protocol were developed by the Environment Protection Authority and are referred to in the Waste Avoidance and

*Typically, eligible containers are pre-sorted and counted by the collection facility into material type then bulked and transported to the appropriate MCF for further counting either automated actual count or via a weight-based approach*

<sup>372</sup> <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/return-and-earn/how-return-and-earn-works>

<sup>373</sup> Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation 2017

Resource Recovery Act 2001 and the Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation 2017.

Of the eligible scheme materials collected in New South Wales, all materials including glass, aluminium, PET, HDPE, mixed plastics, steel, LPB are processed by MRFs and fall under the Material Recovery Facility Processing Refund Protocol with MRFs that also provide bottle crushing services falling under the Bottle Crushing Service Operator Processing Refund Protocol.

As discussed in Section 4, New South Wales operates a range of container return facilities each of which employ manual and automated collection and sorting technologies to verify and count the number of returned containers. Once collected at these facilities, the eligible containers are transported to a MRF where further verification either by direct count or by material weight occurs to determine the appropriate refund amount.

For a MRF to claim a quarterly refund, each operator must:

- Measure and report the total materials received.

and select (as detailed in the Material Recovery Facility Processing Refund Protocol), one of the following material assessment methodologies:

- Method 1 - Weight based assessment; OR
- Method 2 - Direct count assessment of each type of container (e.g., aluminium, PET, HDPE).

Due to the practical difficulties in directly counting each individual container, many MRFs use Method 1 – Weight based assessment. This method allows for the estimation of the numbers of containers processed using a state-wide eligible container factor (eligible container factors are state-wide averages of the number of eligible containers in each kilogram of a material type [e.g., glass or PET] and are calculated by an independent statistician, using sampling data collected from MRFs, and kerbside audits conducted in accordance with the Sampling Strategy<sup>374</sup>) which is then applied to the weights of material types claimed by the MRF operator. The following sections detail the requirements for each material assessment methodology.

### Measurement and Reporting of Total Materials Received

Each MRF operator must measure and record the total quantity and source of all material received at each MRF by measuring the weight of the specified material using calibrated weighing equipment according to the specifications as set out in the Material Recovery Facility Processing Refund Protocol. These measurement specifications include:

- The weight must be measured in tonnes;
- The weight must be measured using weighing equipment that has the following minimum accuracy:
  - For weighbridges: +/- 20kg.
  - For all other weighing equipment: +/- 1kg.
- The weight must be recorded to a minimum of two (2) decimal places;
- The source of each load received at the MRF must be recorded as being from one of the following sources:
  - Material received from a Network Operator or a Collection Point Operator or another MRF operator (scheme material – this material is not eligible for a refund claim, except where it meets the requirements for an inter-MRF transfer and is approved in accordance with the Material Recovery Facility Processing Refund Protocol);

<sup>374</sup> Material Recovery Facility Processing Refund Protocol: Sampling Strategy. November 2017



- Material received from another State or Territory including relevant State or Territory; and
- Material received from sources inside New South Wales excluding scheme material.
- The scheme material is received, counted or processed and weighed, stored and delivered from the MRF separately from all other materials received at the MRF; and
- The receipt, processing, counting, weighing, storage and delivery from the MRF of the scheme material is recorded so that the throughput of this material through the MRF can be tracked and audited at all times.

With regards to reporting, the MRF operator must report to the Scheme Coordinator 14-days after the end of each month the following information:

- The total measured weight of all material received in that month at the MRF by source; and
- The total measured weight of all scheme material:
  - Received in that month at the MRF.
  - Counted or processed and stored at the MRF in that month.

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*Where technical issues occur that may affect operations, MRFs can adjust processes or have contingency capacity and infrastructure to continue operations*

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### Method 1 – Weight Based Assessment

For each output material type, the MRF operator must measure (using calibrated weighing equipment in accordance with the Material Recovery Facility Processing Refund Protocol) and record the quantity of material (excluding scheme material) that is delivered from the MRF for reuse or recycling.

To be eligible for a refund, the MRF operator must report to the Scheme Coordinator 14-days after the end of each month the following information:

- The total measured weight of each relevant output material type (excluding any scheme material) delivered from the MRF for reuse and recycling; and
- The total measured weight of scheme material delivered from the MRF by output material type.

### Method 2 – Direct Count Assessment of each Type of Container

As for Method 1, for each output material type, the MRF operator must (in accordance with the Material Recovery Facility Processing Refund Protocol) count (manual or automated) the number of eligible containers of each relevant output material type (excluding scheme material) that are delivered from the MRF for reuse or recycling.

As reported for Method 1, to be eligible for a processing refund, the MRF operator must report to the Scheme Coordinator 14-days after the end of each month the following information:

- The number of eligible containers (excluding any scheme material) delivered from the MRF for reuse and recycling, by output material type; and
- The number of eligible containers that are scheme material delivered from the MRF by output material type.

To ensure data transparency and accuracy of counting methods, the MRF Operator is required to undertake monthly recounts of a proportion of containers in accordance with the New South Wales Environment Protection Agency Sampling Plan<sup>375</sup>, with documented evidence of all recounts maintained for auditing purposes. The responsibility between the MRF Operator and the Scheme Coordinator in ensuring data transparency is discussed further in Section 7.3.

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<sup>375</sup> Material Recovery Facility Processing Refund Protocol: Sampling Strategy. November 2017

### 7.1.1.3 Inter-MRF Transfer

Generally, where technical issues occur that may affect operations, MRFs can adjust processes or have contingency capacity and infrastructure to continue operations. In cases where, for example, a MRF cannot continue operations due to a malfunction that impacts handling, measuring and processing of materials, or the facility does not have the ability or capacity to process material, MRFs in New South Wales have the ability to seek approval from the Scheme Coordinator to transfer material to another MRF. However, to ensure fraud and/or double counting of containers does not occur, transfers involving material originally received from a network operator, or transfers involving materials that have been processed or partly processed to any degree are not eligible for an inter-MRF transfer. The Scheme Coordinator can reject any other reasonably determined scenario at its discretion. This process is documented in the Material Recovery Facility Processing Refund Protocol<sup>376</sup> which sets out the application process and the criteria that must be met in order for an inter-MRF transfer application to be approved by the Scheme Coordinator.

### 7.1.1.4 Alternative Waste Treatment Facility

Across the global schemes, the majority of eligible scheme containers are processed by a centralised scheme Material Consolidation Facility(ies). However, New South Wales acknowledged that a proportion of eligible containers were also entering the general waste stream with operators of these facilities (e.g., waste transfer stations) having no process to claim a processing refund. As a result, the eligible containers entering the general waste stream were lost to landfills along with the value each container represented. To rectify this, the New South Wales government established the Alternative Waste Treatment Facility (AWT) Processing Refund Protocol<sup>377</sup> to enable operators of these facilities to claim processing refunds for eligible containers recovered through their processing activities and facilitate equity amongst scheme participants and maximising returns to communities and small businesses.

While the methodology of the Alternative Waste Treatment Facility Processing Refund Protocol is generally in-line with that of the MRFs, a key differentiator is the ability for an AWT to claim for two (2) eligible material types only, being aluminium and mixed plastics as these were determined to produce material that is recoverable for recycling<sup>378</sup>. It is probable that material types such as glass were excluded due to the increased risk of breakage and contamination from inclusion in the general waste stream and associated processing. Where an AWT selects a weight-based assessment, the use of an eligible container factor (as also required for MRFs) is also required, however, no quarterly eligible container factors were available at the time of writing.

Further, it was acknowledged that most AWTs manage bulk comingled waste for processing and onward transportation to landfills and are not generally set up to undertake weighing or direct counts of materials. In these cases, the AWT needed to make operational changes to ensure containers could be correctly measured and inputs and outputs were correctly reported.

## 7.1.2 Queensland Case Study

Acknowledging the various pathways that eligible scheme containers can be recovered and returned to the scheme, the Queensland container return scheme included two (2) facilities in the scheme design by which eligible containers could be sorted, verified, processed and the appropriate deposit refund provided. These facilities included a central material processor (i.e., Material Consolidation Facility [MCF]) and the Material Recovery Facility (MRF). Each of these facilities is discussed in more detail in the following sections.

<sup>376</sup> Container Deposit Scheme Material Recovery Facility Processing Refund Protocol, January 2020

<sup>377</sup> Draft Alternative Waste Treatment Facility Processing Refund Protocol, December 2018

<sup>378</sup> Container Deposit Scheme Draft Alternative Waste Treatment Plant Operator Protocol, Fact Sheet, December 2018

### 7.1.2.1 Queensland Scheme Material Processor

The Queensland central scheme material processor (i.e., Material Consolidation Facility [MCF]) is responsible for providing container collection infrastructure to container return facilities (termed container refund points in Queensland), verify the number of containers received from these facilities, preparing the collected containers for sale (e.g., by crushing materials into bales) and managing the transfer of sold materials to the purchasing recycler.

To ensure transparency of data and to ensure validation of eligible container numbers delivered from Queensland container refund points (i.e., container return facilities), the processor (i.e., MCF) receives a manifest from the container return facility noting data such as eligible containers collected<sup>379</sup>.

### 7.1.2.2 Queensland Material Recovery Facility

Material Recovery Facilities (MRFs) in Queensland sort and prepare kerbside collected recyclable material for further re-processing and/or recycling which is either carried out at onshore or offshore facilities. As reported by Container for Exchange, Queensland MRFs have been required to enter into a 50/50 revenue sharing arrangement with the local council with which the MRF has a recycling agreement, and in order to receive a refund for the eligible containers they process. Both parties must enter into a recovery amount agreement detailing how refunds will be shared. Where no agreement is in place no refunds will be paid to the MRF. This revenue sharing arrangement is also in place for New South Wales (see Section 7.1.1 for further information).

## 7.2 Scheme Awareness

Scheme awareness is an important responsibility for the material processing facility(ies) but is dependent on the specific role the facility is required to carry out; namely providing the centralised dedicated scheme processing facility (i.e., Material Consolidation Facility [MCF]), facility catering for the recovery of eligible scheme containers from mixed recycling materials (i.e., Material Recovery Facility [MRF]) or a facility receiving and processing general refuse (i.e., waste transfer station).

In the case of the MCF as the point of consolidation for receiving eligible containers from container return facilities, verifying eligible container numbers, sorting and baling containers for sale to re-processors or direct to manufacturers, the MCF has a key scheme interface role. To be successful in providing such a key role, it is important that the MCF is provided with clear requirements by the Managing Agency to ensure no ambiguity in expectations and roles and responsibilities. In many cases the Managing Agency or Scheme Coordinator is responsible for ensuring clear protocols are in place for implementation by the MCF including, counting protocols and any auditing requirements, expectations for the sale of materials, transportation of materials and expectations associated with refund sharing agreements for eligible containers received via kerbside collections.

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*To be successful in providing such a key role, it is important that the MCF is provided clear requirements by the Managing Agency to ensure no ambiguity in expectations and roles and responsibilities*

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Similarly, where schemes include the MRF and the general refuse processing facilities in the sorting and verification of eligible scheme containers, these facilities must have clarity and a robust understanding of specific scheme requirements in order to maintain the integrity of the scheme (i.e., fraud minimisation) and ensure that any deposit refund claim is linked to containers that meet the scheme acceptance and eligibility criteria. This is achieved by the Managing Agency establishing and setting clear roles and responsibilities underpinned by processes and procedures (e.g., auditing and compliance, container counting and verification processes) that each facility must adhere to.

<sup>379</sup> [https://www.containersforchange.com.au/ecourse-processing-facilities/story\\_html5.html](https://www.containersforchange.com.au/ecourse-processing-facilities/story_html5.html)

## 7.3 Roles and Responsibilities

Material processing facilities involved in container return schemes are required to be well informed of their roles and responsibilities in order to support the successful operation of the scheme. Typically, across the range of container return schemes, it is the centralised dedicated Material Consolidation Facility (MCF) that provides the interface between the Managing Agency and the processing and sale of scheme material to re-processors. The research has shown that in some schemes, the MCF provides collection options including cages, bag and containers to container return facilities for the collection of eligible scheme containers and may also finance the collection and transportation of eligible containers to the MCF for further sorting and verification. As a result, MCFs are required to undertake robust data reporting depending on the assessment method selected as per specific jurisdictional legislation, retain transparent data records and ensure compliance with all Managing Agency requirements. In addition, MCFs are also typically required by the scheme to undertake internal and independent auditing as and when required by the Managing Agency and/or the respective Government.

In comparison, the Material Recovery Facility (MRF) and the general refuse processing facility (i.e., waste transfer station) are commonly required to ensure eligible scheme containers are sorted and verified according to the specific scheme acceptance and eligibility criteria before the containers are eligible for the appropriate refund. Consequently, the role and responsibility of these processing facilities is inter-connected with the facilities ability to extract the eligible containers from the ineligible material.

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*The material consolidation facility commonly provides the interface between the Scheme Operator and the processing and sale of scheme material to re-processors*

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Where the NZ CRS design includes the central dedicated MCF, MRF and general refuse processing facility (i.e., waste transfer station), all must have clarity on their roles and responsibilities provided through the establishment of appropriate documentation, for example, contractual agreements including key performance indicators, compliance and audit processes and procedures and approved eligible container processing and verification methodologies as set by the scheme Managing Agency. This is to ensure all scheme material processing facilities are aware of their requirements to support the ultimate success of the NZ CRS.

The New South Wales container return scheme case study is provided below to highlight the variations in roles and responsibilities that can occur within a container return scheme and which highlights the importance of establishing clear and transparent expectations for all scheme participants to ensure the ultimate success of the scheme.

### 7.3.1 New South Wales Case Study

In the case of New South Wales, the relationship between the MRF Operator and the Scheme Coordinator (i.e., scheme Managing Agency) have different roles and responsibilities depending on which assessment method is used to determine the eligible container processing refund.

As discussed in Section 7.1 it is important to re-highlight here that the New South Wales container return scheme uses existing Material Recovery Facilities (MRFs) to carry out processes such as the sorting, verification, processing and baling of scheme eligible containers, whilst also processing kerbside collected and commercial recyclable material. The MRF is an important part of the Return and Earn container deposit scheme as these facilities provide the central point at which scheme eligible containers are received from the container return facilities, processed and made market ready for sale. As such, the New South Wales container return scheme processing facility provides the services as for a standalone scheme MCF and a MRF. The facility does this by accepting scheme eligible containers in a separate area within the facility to minimise the possibility of ineligible containers contaminating the eligible containers, and consequently minimise the possibility of fraud.

Where the New South Wales MRF Operator implements a weight based assessment of eligible containers (Method 1 – see Section 7.1.1), the Scheme Coordinator will arrange for and pay for independent sampling auditors to undertake quarterly facility based sampling in accordance with the Sampling Strategy with results provided to the New South Wales Environment Protection Agency to calculate the state-wide eligible container factor.

In comparison, where a MRF Operator nominates to the Scheme Coordinator the direct counting of eligible containers to determine the processing refund (Method 2 – see Section 7.1.1), the MRF will arrange for and pay for the monthly recounting of a proportion of containers to be carried out in line with the Sampling Strategy<sup>380</sup>.

Additionally, and as is the case in general contractual arrangements, the client requiring the service has the ability to carry out random audits of the contractor's activities to ensure these meet contractual obligations. In New South Wales, this option exists for the Scheme Coordinator which may arrange with the MRF operator to carry out sampling audits at their facilities at any time within normal business hours.

Consequently, while the New South Wales scheme enables the MRF Operator to select the method by which eligible containers are counted, additional financial costs are imposed on a MRF operator if a direct count method is chosen. A discussion of the financial scheme costs incurred by MRFs is included in Section 7.6.

## 7.4 Communication with the Managing Agency

The communication that is undertaken between scheme material processing facilities (i.e., Material Consolidation Facilities, Material Recovery Facilities, General Refuse Facilities) and scheme Managing Agencies has been touched upon in previous sections. Most official websites of schemes, Managing Agencies, or of the relevant government departments will have online information that is relevant to scheme material processing facilities. In Australia, the Managing Agency and government departments, such as New South Wales Environment Protection Authority are responsible for ensuring that material processing facilities are compliant and provide robust and transparent data to support any refund claim made for processed and recovered eligible containers. Additionally, the Managing Agency commonly establishes dispute resolution processes and procedures to enable scheme material processing facilities to raise issues and have disputes addressed.

Consequently, the NZ CRS design will require the establishment of appropriate communication processes and procedures for material processing facilities to ensure access to clear, robust and transparent information and a mechanism to enable disagreements and/or disputes to be appropriately managed and addressed.

The following sections provide a case study example of the various ways in which the material processing facility communicates with the Managing Agency in New South Wales.

### 7.4.1 New South Wales Case Study

To ensure transparency of information and verification of claim integrity (see Section 7.1.1 for container count information), the New South Wales MRF operator (i.e., central point at which scheme eligible containers are received from the container return facilities ) must nominate (via the New South Wales Environment Protection Agency MRF claim method nomination form) the selected assessment methodology to the Environment Protection Agency and the Scheme Coordinator at least 28-calendar days prior to the commencement of the first quarter. Acknowledging the differences in handling and measurement between material types, MRF operators may use different assessment methods but these must be consistent with the Material Recovery Facility Processing Refund Protocol. If the MRF seeks to

<sup>380</sup> Material Recovery Facility Processing Refund Protocol: Sampling Strategy. November 2017

alter or change any aspect of the approved assessment methodology, this must first be notified to the Scheme Coordinator and the Environment Protection Authority before any change is implemented. This is to ensure integrity of the process and auditability of claim information.

Alongside requirements for approval, MRFs must also carry out verification audits of container samples to provide the Scheme Coordinator with assurance that approved sampling protocols are adhered to and processing refund claims are accurate. The Scheme Coordinator may also at times, in addition to verification activities, appoint an appropriately qualified independent assurance team to carry out an assurance audit of the MRFs operations compliance with one or more aspects of the Protocol. The Environment Protection Authority may also carry out an audit or inspection of the MRF at any time to determine compliance.

Furthermore, where there are disagreements between the MRF operator and the Scheme Coordinator and after discussion these remain unresolved, either party has the opportunity to give written notice requiring that the disagreement or dispute be managed through mediation. Where mediation does not resolve the dispute, a further process can be activated by either party to require independent expert determination with the costs of engaging the expert to be shared by both parties. Unfortunately, no case study examples were available in print at the time of writing.

## 7.5 Bulk Transportation of Material

As discussed in Section 4, the bulk transportation of scheme materials from the material processing facility (i.e., Material Consolidation Facility [MCF], Material Recovery Facility [MRF] or General Refuse Processing Facility [waste transfer stations]) is dependent on the degree of sorting, processing and baling undertaken by the respective facility.

### Material Consolidation Facility (MCF)

In the case of the Material Consolidation Facility (MCF), eligible scheme containers are received from container return facilities typically sorted into the number of categories as specified by the respective scheme (e.g., colour graded PET and glass, HDPE, LPB) or simply received as comingled containers for further sorting and verification. However, due to the risk associated with scheme fraudulent activities (e.g., attempted refund claims for ineligible containers), many scheme MCFs undertake a secondary automated and/or manual sorting and verification process to accurately assess the number of eligible containers received and for which the deposit refund is processed. Once the containers are verified and sorted, the MCF will commonly bulk the scheme eligible containers into specific material types and grades dependent on the appropriate commodity market.

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*Bulk transportation of scheme materials is dependent on the method of container collection and the degree of sorting undertaken by the respective receive facility*

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### Material Recovery Facility (MRF)

In the case of a Material Recovery Facility (MRF), eligible scheme containers are received via kerbside recycling collections whereby the consumer has forfeited the opportunity to redeem the deposit refund. In this case the MRF may either be eligible to claim the full deposit refund or as is the case in Australia, the MRF may be required to enter into a revenue sharing arrangement with the local council to share the deposit refund. As reported with the MCF above, to be eligible for the deposit refund, the MRF must ensure that scheme eligible containers are sorted, verified and stored separately from the ineligible containers to minimise fraudulent activities such as including ineligible containers for a deposit refund. Further, the scheme Managing Agency may require from the MRF verifiable and auditable records and/or real-time data of scheme eligible containers that have been recovered from the kerbside recycling material stream to minimise fraudulent activities. Once the eligible scheme containers are verified and sorted, the MRF will commonly bulk these into specific material types and grades dependent on the appropriate commodity market, however, it is important to note here that the MRF will generally be required by the scheme to have clear separation between the verification and storing

of scheme eligible containers and ineligible containers to, for example, minimise fraud and to also retain the higher value (i.e., cleaner uncontaminated containers) separate from the general kerbside recycling material.

This section discusses bulk transportation of materials from:

- Material Consolidation Facility to the re-processor (e.g., plastics, LPB); and
- Material Consolidation Facility direct to end-market (e.g., aluminium, glass).

Containers returned to many global container return facilities (e.g., RVMs, bag-drops, automated depots) are returned whole and uncrushed by the consumer to retain the integrity of the container and importantly the integrity of the barcode or other unique scheme identification logo. A key function of the barcode is to ensure that each container can be electronically read and can therefore be determined as either eligible (i.e., refund) or ineligible (i.e., no refund) and to importantly minimise fraud (e.g., double counting of processed containers). In these cases, the eligible containers are transported to the respective scheme consolidation facility(ies) un-compacted (i.e., uncrushed) which presents additional transportation costs compared to the transportation of compacted material.

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*Compaction of material early in the process (e.g. container return facilities) improves recycling process efficiencies, reduces required depot footprint, and reduces transportation costs*

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Across several North American schemes, methods to increase transportation efficiencies of lightweight and bulky containers have included the use of trailers, cages or containers to supplement existing onsite storage of empty eligible containers. This enables container return facilities to reduce the footprint of onsite storage areas which may result in onsite and cost efficiencies.

For example, as reported across Canadian schemes (e.g., Alberta, Saskatchewan), compaction of material early in the process (e.g. container return facilities) improves recycling process efficiencies, reduces required depot footprint, and reduces transportation costs<sup>381</sup>. It was reported that while compaction is a mature and proven technology, any reluctance to implementation across Canadian schemes was related to audit requirements. Further, where containers are compacted on a six (6) to one (1) basis or more, it was extremely difficult to audit by recounting the crushed containers. Where compaction technology was widely used throughout a Canadian scheme this was only viable when coupled with automated sorting and counting equipment that lessens or eliminates the audit requirement or where there is an agreement in place between the retailer and presser to use weight as a proxy for count<sup>382</sup>. However, compaction of containers can complicate the auditing process as individual container counts are not generally possible by the MCF and/or the MRF. A weight-based assessment (e.g., New South Wales Method 1 – Section 7.1.1.1) of compacted material provides an alternative auditing process, but for accurate weight measurements the compacted material must be contaminant free. In many global schemes, container return facilities are independent of the scheme MCF and must meet strict quality control and audit procedures with some schemes requiring container return facilities to undertake secondary and tertiary counts of collected eligible containers. Examples of global schemes employing different audit techniques include California where recycling centres and MCF processing facilities are owned by the same organisation which enables collection of containers to occur once at the recycling centre unless signs of fraud are identified, and Saskatchewan which uses a weight conversion verification approach at their processing plants.

Further, purchasers of recovered scheme eligible containers (e.g., Material Re-Processors) commonly require a product that is free from contaminants (e.g., clean PET uncontaminated with HDPE) and commonly impose contaminant rates which means the MCF must have the appropriate sorting

<sup>381</sup> Meyers Norris Penny 2010. Benchmarking Evaluation of Alberta's Stewardship Program for Recycling Empty Beverage Containers

<sup>382</sup> Meyers Norris Penny 2010. Benchmarking Evaluation of Alberta's Stewardship Program for Recycling Empty Beverage Containers

technology in place to ensure contaminant levels are maintained to sustain the market price for the recovered material (to be discussed further in Section 7). Similarly, as purchasers of recycled material impose contaminant rates on MCFs, MCFs may also then transfer this expectation on to container return facilities to ensure collected material is separated into material type prior to transportation to the MCF for further sorting, for example, grading of plastics or colour sorting of glass. Notwithstanding other factors related to the design and implementation of a scheme, establishing clear and consistent collection, quality control and auditing processes integrating all scheme participants is important to maintain material quality and scheme integrity.

Consequently, the efficient transportation of material including the ability to compact eligible scheme containers under the Aotearoa New Zealand scheme are important aspects particularly due to the geographic spread of rural and remote communities and the subsequent transportation distance. Further, it is important to note that along with the NZ CRS scheme objectives, the design also acknowledges and must give effect to the importance of environmental and cultural outcomes. To achieve this, the design must seek to minimise and continually reduce the effect of scheme transportation activities on the Aotearoa New Zealand environment and thereby improve the spiritual interconnection between the land and the people of Aotearoa New Zealand (e.g., lower transport related greenhouse gas emissions supporting improved air quality).

### 7.5.1 Bulk Transportation of Material from the Material Consolidation Facility to the Re-Processor

In many global schemes, transportation of collected eligible containers from the container return facility to the MCF and onwards (e.g., re-processor) presents a challenge as they are bulky and lightweight and commonly require significant compaction to improve transport (and storage [e.g., RVMs compacting containers for space efficiencies]) efficiency. While each scheme is unique, trucks typically transport uncompacted containers or bales of containers that have undergone limited compaction (e.g., from remote areas) from the container return facility to the MCF due to the scheme design requiring sorting, counting and verification of eligible containers at the MCF. Once sorted and verified the MCF will commonly compact and bale containers by material type (e.g., PET, HDPE, LPB, aluminium) according to the requirements of the material re-processor. Transportation arrangements vary across schemes with, for example, specific contractual arrangements either developed between the MCF and the re-processor or established by the Managing Agency (see Section 4 for further detail).

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*Establishing clear and consistent collection, quality control and auditing processes integrating all scheme participants is important to maintain material quality and scheme integrity*

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While the methods of bulk transportation of material from the scheme material processing facility (i.e., MCF and MRF) varies across the global container return schemes, the research suggests that scheme objectives, including the reduction in scheme transport related greenhouse gas emissions, incentivises the scheme Managing Agency to robustly assess and implement mechanisms to give effect to this objective. To achieve this, several schemes have integrated maximising loads of materials achieved through balancing baling and compaction at container return facilities with fraud control measures, through to utilising third party back-haul arrangements for transportation of materials from the material processing facility to the re-processor and continually investigating options for improved transport efficiency.

Considering this information in the context of a NZ CRS design, there is opportunity and scope to incentivise the scheme Managing Agency to take an active and decisive role in establishing arrangements, either third party contracted, or Agency owned and operated, to maximise transportation efficiencies by giving effect to the environmental, social, cultural and economic foundation pillars of the NZ CRS. To achieve this, the NZ CRS may benefit from, for example, the:



- Inclusion of emission efficient trucks such as electric vehicles and ensure the placement of scheme material with compliant re-processors (environmental pillar);
- Advancement of social wellbeing through community employment associated with the collection and transportation of scheme containers (social pillar);
- Promotion and advancement of Tangata Whenua and the Māori worldview associated with the interconnection between people’s activities and the land of Aotearoa New Zealand (cultural pillar); and
- Incorporation of cost-efficient transportation and other logistically efficient mechanisms with the scheme (economic pillar).

The scheme Managing Agency will give effect to the four (4) pillars in the context of the material transportation from the scheme material processing facility to the re-processor.

## 7.5.2 Bulk Transportation of Material from the Material Consolidation Facility Direct to the End-Market

Whilst the majority of scheme materials (e.g., PET, HDPE, LPB) are processed (i.e., collected, sorted, verified, baled/compacted) prior to being transported to the re-processor, other materials such as glass are transported directly to, for example, a glass beneficiation facility where the recycled glass (cullet<sup>383</sup>) may be colour sorted (if not already done so at the container return facility) and contaminants removed before the material is then re-processed into glass containers (e.g., bottles)<sup>384</sup>. Due to the weight of glass, the material is not typically exported but rather transported to local glass markets, or interstate as is the case in Australia<sup>385</sup>.

Following a similar process to glass, aluminium can be re-processed in its current form (e.g., cans) once it has undergone washing, shredding and re-processing<sup>386</sup>. However, aluminium is typically collected, verified and baled/compacted at an existing MCF prior to being transported to the re-processor.

In the context of a NZ CRS design, glass is anticipated to be transported directly from the container return facility and/or the scheme material processing facility to the re-processor (e.g., O-I Glass or aggregates plant) due to the cost of transportation related to material weight. However, it is important to reiterate here that all eligible scheme containers must be verified at each point in the scheme where containers are handled to track scheme finances (i.e., refunded deposits) and verifying container numbers to minimise fraudulent activities that may occur at these points (e.g., redeeming ineligible containers along with verified eligible containers). Additionally, where compaction is approved by the Managing Agency, this activity should occur at or as close to the point of collection as possible to achieve transport efficiencies and only occur after the containers have been verified and counted. As a result, the NZ CRS scheme Managing Agency will be required to establish and implement suitable robust and transparent fraud mitigation measures as well as compliance and audit processes and procedures.

## 7.6 Financial Accountability Systems and Processes

Material processing facility financial accountability systems and processes are critical components in the design of a container return scheme as these provide the foundation on which the Managing Agency can, for example track, and audit the quantity of eligible containers returned (i.e., container return rates) and value of deposits repaid to consumers. Financial accountability measures are equally as important to scheme participants, including the container return facility as any discrepancy in the number of eligible containers collected and transported to the specific scheme material processing

<sup>383</sup> Glass cullet – glass which has been recovered, sorted and crushed and is suitable for recycling through glass manufacturing

<sup>384</sup> <https://recycleglass.com.au/glass-lifecycle/>

<sup>385</sup> Revenue Sharing Arrangements between MRFs and councils from the NSW Container Deposit Scheme, 2018

<sup>386</sup> <http://www.recycle.co.nz/page.php?ref=recycled-waste&id=edit4cf83277de9a9>

facility can be tracked and audited against the data provided by the material processing facility to the Managing Agency. Therefore, as with many other scheme design components, the financial accountability systems and processes are interlinked and often interdependent with broader design components supporting the ultimate success of a scheme.

Consequently, the NZ CRS design will need to ensure robust and transparent financial accountability systems and processes are established for the scheme as well as specific requirements for scheme participants, including the material processing facility. While the NZ CRS Managing Agency will have the responsibility for the overall operation and performance scheme, the material processing facility will be required to adhere to specific data management processes to ensure robust financial information is collected and provided to support transparent management of the scheme finances.

The following New South Wales case study example details the financial systems and processes applied throughout the scheme and specifically implemented to manage the schemes material processing facility (i.e., the Material Recovery Facility [MRF]).

### 7.6.1 New South Wales Case Study

It is important to re-highlight here that the New South Wales container return scheme uses existing Material Recovery Facilities (MRFs) to carry out processes such as the sorting, verification, processing and baling of scheme eligible containers, whilst also processing kerbside collected and commercial recyclable material. As such, the New South Wales container return scheme processing facility provides the services as for a standalone scheme MCF and a MRF. The facility does this by accepting scheme eligible containers in a separate area within the facility to minimise the possibility of ineligible containers contaminating the eligible containers, and consequently minimise the possibility of fraud.

As introduced in Section 7.1.1, New South Wales material processing facilities (i.e., MRFs and Alternative Waste Transfer Stations) are able to claim from the Scheme Coordinator (i.e., scheme Managing Agency) a refund for eligible containers disposed of through household kerbside and general refuse collections and recycled so long as the Environment Protection Authority has been notified by the local council of a specific refund sharing agreement or other form of agreement (see Section 7.6.1.2 for further information).

In the case of eligible containers collected through commercial recycling collections (e.g., hospitality sector including hotels, restaurants, bars and cafes) all refunds are issued to the MRF or AWT which may therefore drive competition between facilities for commercial waste streams (e.g., increase competition between facilities to secure commercial recycling contracts).

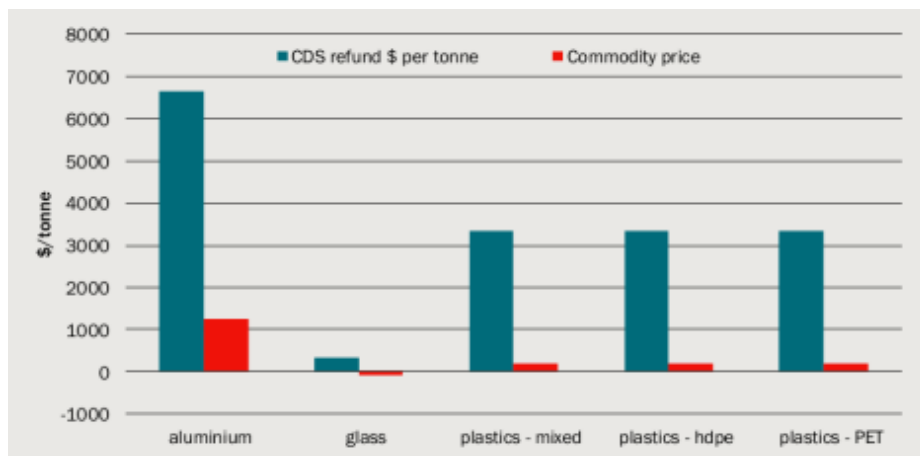
While it is not the intent of this report to undertake a detailed assessment of the impacts of a NZ CRS on existing Material Recovery Facilities (MRFs), it is important at this stage of the discussion to broadly introduce and acknowledge the types of financial impacts (e.g., reduction in the volume of kerbside collected recyclable material entering the MRF) other container deposit schemes have had on existing MRFs and the associated systems and processes established to manage accountability.

As reported for New South Wales MRFs, these impacts may include the following<sup>387</sup>:

- Direct administration and compliance costs;
  - Costs may be related to preparation of refund claims, annual recycling statements and obtaining independent audit, but are dependent on whether a MRF directly counts containers or elects to use the eligible container factor (see Section 7.1.1 for further information).
- A change in the volume of materials processed;

<sup>387</sup> Revenue Sharing Arrangements between MRFs and councils from the NSW Container Deposit Scheme, 2018

- The refund revenue available from the scheme to the MRFs is dependent on how many eligible containers go through the MRF (i.e., kerbside and/or commercial collections) compared to those containers being returned directly to container return facilities.
- Reports indicate that the numbers of eligible containers entering South Australian MRFs are expected to be lower than in New South Wales because of the scheme's maturity and a large number of return facilities<sup>388</sup>.
- Potential change in the markets available for MRFs to sell into;
  - Collected containers may be cleaner than ineligible containers which may mean a lower value associated with those ineligible containers.
- An increase in revenue due to revenue available from container refunds.
  - It has been reported<sup>389</sup> that the revenue available from the New South Wales scheme refunds dwarfs the underlying price of the commodities. The example of aluminium was given where an empty aluminium can weigh approximately 15g meaning there that there are approximately 67,000 aluminium cans in a tonne of eligible scheme material. This would provide revenue of \$6,700 (based on the 10c refund) through the scheme. In comparison, the price of aluminium received by MRFs in New South Wales is approximately \$1,250 per tonne. The report notes the price differential is greater for other materials with Figure 25 below taken from the report to illustrate the reported differences.



**Figure 25: New South Wales Container Deposit Scheme revenue and underlying commodity price<sup>390</sup>**

Furthermore, MRFs may also have different cost structures and costs reflecting the following areas:

- Size of the facility;
- Counting technology/process;
- The degree of sorting technologies used – manual sorting versus automated sorting; and
- Labour.

The following sections discuss the specific systems and processes in place in New South Wales to ensure transparency and assurance of financial information, including data verification associated with refund processing claims.

<sup>388</sup> Revenue Sharing Arrangements between MRFs and councils from the NSW Container Deposit Scheme, 2018

<sup>389</sup> Revenue Sharing Arrangements between MRFs and councils from the NSW Container Deposit Scheme, 2018

<sup>390</sup> Revenue Sharing Arrangements between MRFs and councils from the NSW Container Deposit Scheme, 2018

### 7.6.1.1 New South Wales Material Recovery Facility

To be eligible for a processing refund, a MRF operating in New South Wales must submit to the Scheme Coordinator (i.e., scheme Managing Agency) a quarterly claim for each operated facility including all relevant information for all eligible containers covered under the claim.

As per the Material Recovery Facility Processing Refund Protocol, the Scheme Coordinator receives a processing refund from each MRF for each material type as prior agreed with the Scheme Coordinator. For the Scheme Coordinator to process these payments quickly and efficiently, MRFs are required to report on specific information (as discussed in Section 7.1.1) to ensure the refund application is for eligible containers that have actually been processed for reuse or recycling by the MRF operator (excluding those eligible containers received from interstate or received before 1 December 2017). The requirement for reporting of robust, accurate and consistent information is vitally important to minimise fraud and ensure correct refunds are calculated and issued.

As MRFs have the option of a weight-based assessment methodology or a direct count assessment of each type of container, the Scheme Coordinator must apply different calculations to determine the appropriate total refund amount. For example, where a MRFs has submitted a quarterly claim based on Method 1 (Weight Based Assessment - Section 7.1.1), the Scheme Coordinator determines the estimated number of eligible containers processed for reuse or recycling using the specific formula as defined in the Material Recovery Facility Processing Refund Protocol including the application of an eligible container factor. The Environment Protection Agency determines the eligible container factor for each output material type by using sampling data, claim information and any other relevant information which up to quarter 2 of 2019 was approved by the Container Deposit Scheme Ministerial Advisory Committee, and now to be approved by the State Representative. This ensures a degree of independence in the establishment of the eligible output material container factors with quarterly publication of these figures on the New South Wales Environment Protection Authority website.

Briefly, the eligible container factors are reported as state-wide averages of the number of eligible containers in each kilogram of a material type (e.g., glass or PET) and are independently calculated and developed in accordance with the MRF Protocol Sampling Strategy as discussed in Section 7.1.1.

Table 13 and Table 14 set out the eligible container factors reported by the New South Wales Environment Protection Authority during the four (4) quarters from January 2019 to December 2019 and December 2017 to December 2018, respectively. Broadly, over the period of 12-months from 2018 to 2019, the reported quarterly eligible factors for material types decreased and is likely due to changes in MRF Operator inputs during the quarterly periods (e.g., material volumes). As more data is collected and as MRF Operator inputs re-stabilise, these eligible container factors are also expected to stabilise.

**Table 13: New South Wales eligible container factors reported from January 2019 to December 2019**

Material	Factor (eligible ct/kg) (count eligible per kilogram by material stream)			
	Quarter 1 January - March	Quarter 2 April - June	Quarter 3 July - September	Quarter 4 October - December
Aluminium	51.83	47.38	45.98	51.25
PET segregated	14.26	12.19	10.39	10.67
HDPE segregated	0.51	0.41	0.42	0.29
Mixed plastics segregated <sup>391</sup>	2.56	2.16	3.29	1.96
Mixed plastics combined <sup>392</sup>	4.18	4.13	3.57	3.84

<sup>391</sup> Refers to the remaining plastic types (in aggregate) for MRFs which segregate PET and HDPE plastic types

Material	Factor (eligible ct/kg) (count eligible per kilogram by material stream)			
	Quarter 1 January - March	Quarter 2 April - June	Quarter 3 July - September	Quarter 4 October - December
Glass	1.28	1.02	0.97	1.18
	Approved 13 May 2019	Approved 12 August 2019	Approved 12 November 2019	Approved 12 February 2020

**Table 14: New South Wales eligible container factors reported from December 2017 to December 2018**

Material	Factor (eligible ct/kg) (count eligible per kilogram by material stream)			
	Quarter 1 January – March 2018	Quarter 2 April – June 2018	Quarter 3 July – September 2018	Quarter 4 October – December 2018
Aluminium	59.17	58.11	48.73	50.36
PET segregated	18.96	13.90	12.69	13.30
HDPE segregated	0.69	0.64	0.43	0.52
Mixed plastics segregated	3.62	2.83	2.82	2.62
Mixed plastics combined	8.74	5.44	4.70	4.06
Glass	2.25	1.83	1.57	1.77
	Approved 24 April 2018	Approved 10 August 2018	Approved 5 November 2018	Approved 31 January 2019

In some instances, there may be an underpayment or overpayment (e.g., reconciliation of payments) of a processing refund and in these situations the Scheme Coordinator will work with the applicant (e.g., MRF) to review the claim as per the requirements (e.g., timeframes for payment, payment plans, proof of underpayment) of the appropriate processing refund protocol to ensure reconciliation of the payments.

### 7.6.1.2 Material Refund Sharing Agreements

As discussed in Section 7.1.1, New South Wales MRFs are able to claim from the Scheme Coordinator a refund for the processing of eligible containers recovered via kerbside recycling collections. However, while MRFs were refunded the complete refund amount prior to 1 December 2018, the New South Wales Environment Protection Authority has since updated the legislation noting that MRF operators (including Alternative Waste Treatment Facilities) can only claim refunds for containers collected in a local council's area if the councils they service have:

- notified the EPA that the council has entered into Refund Sharing Agreement with the MRF operator and that it considers the agreement to be fair and reasonable, or
- notified the EPA that the council considers that it is fair and reasonable that there is no refund sharing agreement in force with the MRF operator, or
- have entered into a new processing agreement with the MRF operator after 1 December 2017.

<sup>392</sup> Refers to all plastic types (aggregated) for MRFs which do not segregate plastic types

As a result, it is the council's responsibility to notify the Environment Protection Authority of any arrangement that has been established with the local MRF operator thereby encouraging communication and negotiation between councils and MRFs regarding container deposit scheme revenues from kerbside recycling collections. Generally the contractual arrangements between MRFs and the respective councils are confidential and therefore not available to view, however an internal agenda and business paper published by the Wagga Wagga City Council in December 2018<sup>393</sup> recommended a 50/50 refund sharing agreement be established with the Kurrajong MRF for a period of 12-months from 11 December 2018 to 10 December 2019, including a retrospective payment covering 1 December 2017 to 30 November 2018. Based on this agreement, it was reported that the Wagga Wagga City Council and therefore the community would receive approximately AUD\$500,000 per annum but that this figure was dependent on continued receipt of containers through the MRF.

Taking the above presented information and applying it to the design of a NZ CRS, the scheme Managing Agency will support the establishment of a revenue sharing arrangement (deposit or handling fee amount, including a transitional period) underpinned by clear guidelines (e.g., the default position could have the deposit shared 50/50 between the two parties making sure no party is disadvantaged nor gains a windfall from the NZ CRS with any surplus returned to the ratepayer) between the local council and the MRF for eligible containers collected via kerbside recycling collections.. It is recommended each Territorial Local Authority and MRF operator undertake their own negotiations (excluding the involvement of the Managing Agency) and reach agreement on revenue sharing as this recognises the different contractual arrangements that exist across Aotearoa New Zealand. Acknowledging the Australian 50/50 revenue sharing arrangement, a suitable arrangement should be established for the NZ CRS design and set at a level that will support kerbside recycling and incentivise the MRF to fund processing and maximise recovery of eligible containers. The reason for this is to incentivise the MRF operator to make all appropriate efforts to separate out and redeem eligible containers (in accordance with the scheme acceptance criteria). This revenue sharing arrangement opportunity may then support local councils to recognise the revenue from containers in the recycling bin to offset recycling collection costs incurred by ratepayers and incentivise MRFs to continually improve operations related to the collection and sorting of eligible scheme containers.

Further, an important element for the NZ CRS design is the minimisation of unintended perverse outcomes such as driving higher eligible container return rates via kerbside recycling to support higher revenues for both MRFs and local authorities. This could occur, for example, if the local authority and or MRF operator do not use opportunities available to them to promote awareness of the scheme.

To reduce this risk, one option to consider is that any revenue sharing between MRF operators and local authorities is limited to the handling fee amount only, not the deposit. This would reflect the same payment made to a collection point. The unredeemed container deposits given up by consumers choosing to place eligible scheme containers in kerbside recycling would then be used to reduce overall scheme costs.

The Managing Agency and the associated Governance Board will be responsible for the ultimate success of the scheme and so will need to work closely with all scheme participants to ensure that scheme objectives are aligned with the roles and responsibilities of, for example, local authorities and MRFs where a revenue sharing arrangement is established. As a result, the NZ CRS implementation phase will require the establishment of a risk and compliance platform to address this matter and others, including fraud minimisation and transparency of data and information.

## 7.7 The Aotearoa New Zealand Context

As discussed throughout this section, eligible scheme containers are commonly received for processing at either a centralised and dedicated scheme Material Consolidation Facility (MCF) or at an existing

<sup>393</sup> [https://meetings.wagga.nsw.gov.au/Open/2018/12/OC\\_10122018\\_AGN\\_AT\\_EXTRA.htm](https://meetings.wagga.nsw.gov.au/Open/2018/12/OC_10122018_AGN_AT_EXTRA.htm)

Material Recovery Facility (MRF) processing kerbside and commercial recyclables. Additionally, eligible containers may also be recovered from kerbside general refuse collections from, for example, waste transfer stations. The differences between these facilities are based on several predominant pathways by which eligible scheme containers are returned and recycled by the consumer. In the context of the NZ CRS the MCF will only receive and process eligible scheme containers whereas the MRF will remain a sorting facility that extracts eligible scheme material from recyclables.

For clarity, it is important to reintroduce the respective processing facility and the pathway by which eligible scheme containers are returned and recycled by the consumer as this will influence the NZ CRS material processing facility make-up:

- Material Consolidation Facility (MCF) Pathway
  - Consumer returns eligible scheme material to a container return facility for the appropriate refund. Scheme material is sorted, verified and processed by one or more centralised scheme Material Consolidation Facilities (MCFs).
- Material Recovery Facility (MRF) Pathway
  - Consumer disposes eligible scheme material into the kerbside recycling service and does not receive a refund. Scheme material is sorted, verified and processed by an existing Material Recovery Facility (MRF).
- General Refuse Processing Facility Pathway
  - Consumer disposes eligible scheme material into the kerbside refuse service and does not receive a refund. Scheme material is commonly disposed of to landfill unless processes and procedures are in place to recover scheme eligible material.
- Disposal to the Environment Pathway
  - Consumer disposes eligible scheme material to the environment (i.e., litter) and does not receive the refund.

To ensure the most cost effective and efficient NZ CRS is established, recognition of the expected eligible container count per region and the need to minimise transportation movements (i.e., reduce the schemes carbon footprint) is required in order to determine the number of MCFs needed to deliver such a service to Aotearoa New Zealand.

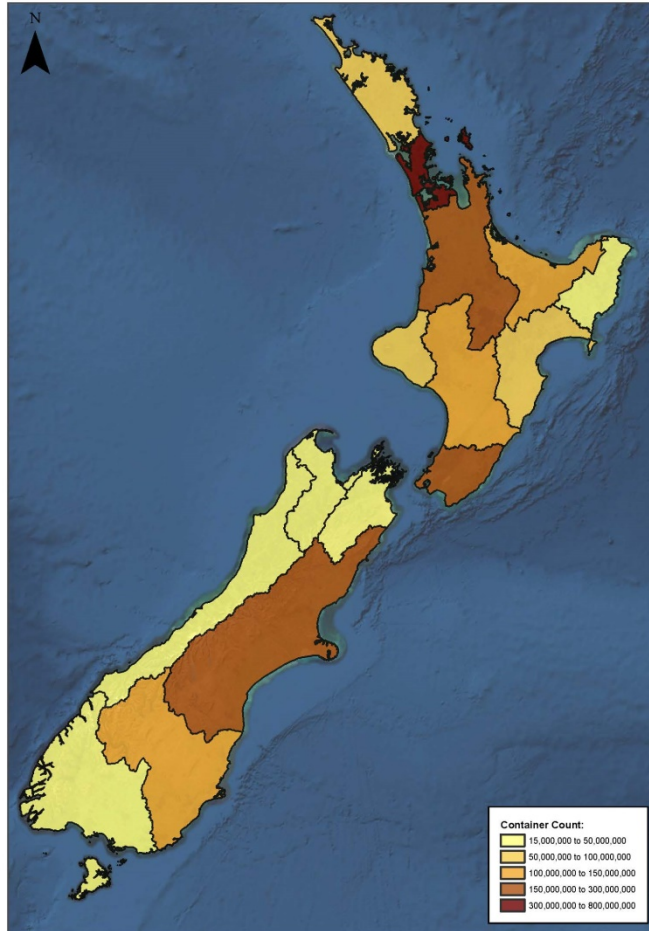
Figure 26 below illustrates the eligible scheme container count overlaid with the sixteen (16) New Zealand territorial regions. Clearly, the number of eligible scheme containers is highest in the Auckland region (300,000,000 – 800,000,000 containers) followed by the Waikato, Te Whanganui-a-Tara - Wellington and Waitaha – Canterbury regions each with an expected 150,000,000 to 300,000,000 containers. Looking at Te Ika a Maui - the North Island in more detail, it is clear that the higher population base is also reflective of the expected container count across the wider regions compared with Te Wai Pounamu - the South Island where the population is sparse and container count lower in comparison.

Taking this information into consideration, it is recommended that each region will have a dedicated MCF. There may be a requirement for more than one (1) MCF in a region where it is demonstrated that an additional MCF(s) would lead to improved scheme efficiencies such as transport savings without compromising increased risk of fraud.

It is envisaged that establishment of the scheme MCF network would include existing Territorial Local Authority (TLA) owned/contracted resource recovery infrastructure (e.g., resource recovery centres) which could be upgraded/converted to become an expansion of the NZ CRS MCF network.

Where appropriate and practicable, the Managing Agency will give effect to prioritising the use of existing infrastructure in Aotearoa New Zealand to reduce scheme costs and maximise the opportunity for reuse. Further, incorporating where possible, Aotearoa New Zealand's existing infrastructure (e.g., TLA owned/contracted resource recovery infrastructure), will assist in establishing a cost-efficient

scheme whilst ensuring recognition of businesses already providing relevant services. For clarity, the MCF and MRF will not be able to operate as one (1) operation but will be able to be situated on the same land footprint with clear delineation between the two entities such as fences and separate equipment to mitigate the risk of fraud (see Section 17 for further discussion regarding next steps to be carried out during the NZ CRS implementation stage).



**Figure 26: Eligible scheme container count from across the sixteen New Zealand regions**

For the purpose of the NZ CRS and to ensure the scheme compliments existing kerbside recycling collection services, the MRF facility will continue to receive kerbside recyclables which may also include eligible scheme material. Acknowledging that this situation will occur in Aotearoa New Zealand, it is important that the NZ CRS support the establishment a revenue sharing arrangement between the Material Recovery Facility and the local authority (the specific nature of the arrangement will be determined by the two parties), similar to the New South Wales container return scheme agreement that requires a 50/50 revenue share of the container deposit between the parties. However, as will be discussed further in later sections and to minimise unintended perverse outcomes such as driving higher eligible container return rates via kerbside recycling to support higher revenues for both MRFs and local authorities, one option to consider is that any revenue sharing between MRF operators and local authorities is limited to the handling fee amount only, not the deposit. This would reflect the same payment made to a collection point. The unredeemed container deposits given up by consumers choosing to place eligible scheme containers in kerbside recycling would then be used to reduce overall scheme costs (see Section 11 for further discussion).

As such, the MRF will continue to provide a vital pathway by which eligible scheme containers can be recovered from the kerbside recycling stream, but will only be eligible to receive a deposit or handling fee refund (noting this will be under a revenue sharing arrangement with the local council) if the scheme



containers meet the required scheme container eligibility criteria (see Section 3 for further discussion). Additionally, general refuse processing facilities (e.g., waste transfer stations) recovering scheme eligible material will be required to ensure any recovered containers meet the required scheme eligibility criteria (see Section 3 for further discussion) in order to be eligible for a refund (it is anticipated that either a deposit or handling fee refund would be applied). Further, specific conditions, such as limiting general refuse processing facilities to the collection of, for example, two (2) material streams (e.g., cans, plastic that meet the required scheme eligibility criteria) may be imposed recognising the increased likelihood of glass breakage and which reflect current practice adopted in New South Wales<sup>394</sup>. It is also acknowledged that Aotearoa New Zealand's current MRFs and general refuse processing facilities may not currently be equipped to recover eligible scheme material from ineligible materials. As such and assuming all MRFs and general refuse processing facilities participate in the NZ CRS, it is anticipated that these facilities will require some degree of infrastructure and technology investment in alignment with scheme requirements, including the infrastructure (e.g., sorting lines) to sort and recover material that meets the scheme eligibility criteria and measures to minimise fraudulent activities (e.g., scheme approved container verification technology).

In addition, the NZ CRS scheme Managing Agency will give effect to the following components in the establishment of the NZ CRS MCF network:

- Container counting methodology;
- Fraud mitigation processes and procedures;
- Baling and/or compaction of eligible scheme material;
- Establishment of collection service contracts and/or agreements (e.g., back-haul arrangements);
- Auditing and compliance processes and procedures; and
- Sale of scheme material.

## 7.8 Summary of Key Findings

The outcomes of the above research show that eligible scheme containers can be returned by the consumer via several pathways which are associated with different material processing facilities. Briefly, eligible scheme containers are commonly received for processing at either a centralised and dedicated scheme Material Consolidation Facility (MCF), at an existing Material Recovery Facility (MRF) processing kerbside and commercial recyclables, or recovered from kerbside general refuse collections (e.g., waste transfer stations). The differences between these facilities are based on several predominant pathways by which eligible scheme containers are returned and recycled by the consumer (Section 7):

### 5. Material Consolidation Facility (MCF) Pathway

- Consumer returns eligible scheme material to a container return facility for the appropriate refund. Scheme material is sorted, verified and processed by one or more centralised scheme Material Consolidation Facilities (MCFs).

### 6. Material Recovery Facility (MRF) Pathway

- Consumer disposes eligible scheme material into the kerbside recycling service and does not receive a refund. Scheme material is sorted, verified and processed by an existing Material Recovery Facility (MRF).

### 7. General Refuse Processing Facility Pathway

- Consumer disposes eligible scheme material into the kerbside refuse service and does not receive a refund. Scheme material is commonly disposed of to landfill unless processes and procedures are in place to recover scheme eligible material.

### 8. Disposal to the Environment Pathway

<sup>394</sup> Draft Alternative Waste Treatment Facility Processing Refund Protocol, December 2018. New South Wales Environment Protection Authority

- Consumer disposes eligible scheme material to the environment (i.e., litter) and does not receive the refund.

However, across the global container return schemes, the Material Consolidation Facility (MCF) commonly provides the centralised point at which eligible scheme containers are received, verified, sorted and baled ready for delivery direct to end-markets or direct to material re-processors. Similarly, existing Material Recovery Facility (MRF) infrastructure has been incorporated into container return scheme designs by providing a mechanism by which consumers who have disposed of eligible scheme material in kerbside recycling without redeeming the appropriate refund are collected, counted and processed. Where the MRF receives and processes eligible scheme material, a contractual revenue sharing arrangement is commonly established between the MRF and the local council, with the revenue shared acknowledging the contribution and services provided by the respective provider. Further, the method implemented to verify eligible containers is either via direct count or using a weight-based approach, although many global schemes employ a direct count verification method. Where eligible containers are recovered from the general refuse, these containers must meet the scheme eligibility criteria in order to be eligible for a deposit refund (i.e., clean, visible and legible scheme barcode and/or logo).

Taking all the above into consideration and specifically:

- Scheme design to determine the number of sorts required for processing eligible containers and consequently the alignment required between the scheme material processing facilities (i.e., MCF, MRF, general refuse processing facilities) and the container return facilities (e.g., manual collection depots) (Section 7);
- The ability of a scheme material processing facilities (i.e., MCF, MRF, general refuse processing facilities) to undertake automated actual counts is determined by the container count method (e.g., barcode scanning, shape verification) which in turn determines the form eligible containers are received (e.g., 'whole' containers with scheme ID intact [e.g., barcode, logo]) (Section 7.1);
- Arrangements put in place to manage eligible scheme containers collected via local council kerbside recycling collections (i.e., MRF) and eligible containers entering the general refuse via waste transfer stations (Section 7.1);
- Options for compaction of material at the container return facilities (e.g., manual collection depots such as resource recovery centres) to reduce depot footprints and reduce transportation costs aligned with the scheme MCF container counting and verification methodology and Managing Agency audit and fraud minimisation requirements (Section 7.1);
- Processes established to audit scheme eligible glass container return rates collected via kerbside recycling collections to support appropriate MRF glass material handling fee claims (Section 7.1.1.2);
- Contingency infrastructure and/or arrangements put in place to ensure scheme material processing facilities (i.e., MCF, MRF) can continue processing eligible scheme containers in the event of capacity issues and/or infrastructure down-time (Section 7.1.1.3);
- Accurate data verification and transparency of data with arrangements in place between the container return facility, scheme material processing facilities (i.e., MCF, MRF, general refuse processing facilities) and Managing Agency to ensure accurate and traceable data (Section 7.6);
- Where the scheme MCF is not part of the Managing Agency, clear contractual arrangements between the Managing Agency and the MCF including ability for the Managing Agency to undertake random audits of MCF activities to ensure they meet contractual obligations (Section 7.3);

- Clear communication and expectations of scheme material processing facilities (i.e., MCF, MRF, general refuse processing facilities) roles and responsibilities managed by central government and the Managing Agency (Section 7.3);
- Most official websites of schemes, Managing Agencies, or of the relevant government departments will have online information that is relevant to scheme material processing facilities (Section 7.4);
- The Managing Agency commonly establishes dispute resolution processes and procedures to enable scheme material processing facilities to raise issues and have disputes addressed (Section 7.4);
- Transportation of scheme materials from the material processing facility (i.e., Material Consolidation Facility [MCF], Material Recovery Facility [MRF] or General Refuse Processing Facility [waste transfer stations]) is dependent on the degree of sorting, processing and baling undertaken by the respective facility (Section 7.5);
- In the case of the Material Consolidation Facility (MCF), eligible scheme containers are received from container return facilities typically sorted into the number of categories as specified by the respective scheme (e.g., colour graded PET and glass, HDPE, LPB) or simply received as comingled containers for further sorting and verification (Section 7.5);
- In the case of a Material Recovery Facility (MRF), eligible scheme containers are received via kerbside recycling collections whereby the consumer has forfeited the opportunity to redeem the deposit refund (Section 7.5);
- Transportation of collected eligible containers from the container return facility to the MCF and onwards (e.g., re-processor) presents a challenge as they are bulky and lightweight and commonly require significant compaction to improve transport (and storage [e.g., RVMs compacting containers for space efficiencies]) efficiency (Section 7.5);
- Scheme objectives, including the reduction in scheme transport related greenhouse gas emissions, incentivises the scheme Managing Agency to robustly assess and implement mechanisms to give effect to this objective (Section 7.5);
- Several schemes have integrated maximising loads of materials achieved through balancing baling and compaction at container return facilities with fraud control measures, through to utilising third party back-haul arrangements for transportation of materials from the material processing facility to the re-processor and continually investigating options for improved transport efficiency (Section 7.5);
- Whilst the majority of scheme materials (e.g., PET, HDPE, LPB) are processed (i.e., collected, sorted, verified, baled/compacted) prior to being transported to the re-processor, other materials such as glass are transported directly to, for example, a glass beneficiation facility (Section 7.5);
- Where compaction is approved by the Managing Agency, this activity should occur at or as close to the point of collection as possible to achieve transport efficiencies and only occur after the containers have been verified and counted (Section 7.5);
- Material processing facility financial accountability systems and processes are critical components in the design of a container return scheme as these provide the foundation on which the Managing Agency can, for example track, and audit the quantity of eligible containers returned (i.e., container return rates) and value of deposits repaid to consumers (Section 7.6); and
- The financial accountability systems and processes are interlinked and often interdependent with broader design components supporting the ultimate success of a scheme (Section 7.6).

The scheme MCF is to be incorporated into a NZ CRS design as an integral component responsible for the central repository and on-ward transportation hub to end-markets and/or material re-processors.

Whilst the role and responsibility arrangement of the Material Processing Facilities within a scheme differs across many global container return schemes, fundamentally, the scheme MCF provides the central point at which scheme collected eligible scheme containers are counted, verified sorted and baled ready for transport to material re-processors and/or direct to end-markets. The exception to this is glass which will ordinarily be transported direct to the Material Re-Processor.

## 7.9 Summary of Design Feedback Received

The following table provides a high-level summary of the feedback received from the Scheme Design Working Group (SDWG) members after reviewing the section information. As many suggestions as possible have been incorporated but the NZ CRS Project Team acknowledge that the wide range of views expressed meant not every edit could be accepted. The NZ CRS Project Team is grateful for those who have provided feedback and where possible these have been used to provide further clarity and context throughout this section and to identify areas requiring further assessment during the NZ CRS implementation stage (Section 17).

Summary of Material Processing Facility Feedback	
<b>Areas for further Investigation</b>	
Analysis of the effectiveness and capacity of existing sites and integration with CRS (see Section 17 for further discussion).	Chain of custody of materials and fraud mitigation measures (see Section 11, Section 14 and Section 17 for further discussion).
The process for licencing and/or registering of container return facilities, determining additional collection points and converting MRFs into MCFs (see Section 4 and Section 17 for further discussion).	The equipment used for counting at sites (see Section 4 and Section 17 for further discussion).
The process for transportation, including if material will be transported loose, compacted or baled, the compaction rate, and how breakages will be managed, including for refillables (see Section 14 for further discussion).	How kerbside materials will be managed if there will be no demand for the material (see Section 17 for further discussion).
The capital cost for building new infrastructure such as the MCFs (see Section 11 for further discussion).	How backdated refunds will be paid by the Managing Agency (see Section 11 for further discussion).
How conflicts of interest will be managed if the beverage industry will fund and run the scheme (see Section 14 for further discussion).	Greater detail on the impacts on kerbside recycling, including for kerbside collections of glass only, and impacts of scavenging of kerbside and stranded assets such as trucks for kerbside (see Section 11, Section 14 and Section 17 for further discussion).
The process for refillables after they are returned by consumers, including if they go through MCFs or Material Re-Processors (see Section 17 for further discussion).	Processes for measurement and reporting (see Section 14 for further discussion).
How international facilities separate eligible containers from commingled waste (see Section 17 for further discussion).	

Summary of Material Processing Facility Feedback	
<b>Opposing Views</b>	
<p>Transporting compacted containers:</p> <ul style="list-style-type: none"> <li>Members in support state that this improves transportation efficiencies, however, highlight that audits and fraud management controls should be implemented. There are also safety and environmental risks with transportation of non-compacted materials.</li> <li>Members against require further analysis on the benefits of compaction compared to fraud risks, and the ability of the Managing Agency to audit compacted materials.</li> </ul>	<p>Using a weight-based protocol of bales instead of recounting containers:</p> <ul style="list-style-type: none"> <li>Members in support state that this is faster and has a smaller carbon footprint.</li> <li>Members against state that there are fraud, contamination and light-weighting risks. If to be used, some state that fraud mitigation processes should be investigated.</li> </ul>
<p>MRFs and councils to receive a revenue from scheme:</p> <ul style="list-style-type: none"> <li>Members for state that if they are not compensated, the kerbside system will be at risk.</li> <li>Members against state that kerbside material should be excluded to encourage people to return containers. Additionally, some state that MRFs and councils should not receive a handling fee</li> </ul>	
<p>Revenue sharing arrangement:</p> <ul style="list-style-type: none"> <li>Some state the value should be a contracted agreement managed by MRFs and councils, rather than by the Managing Agency.</li> <li>Some members suggest a 50/50 sharing arrangement, especially if an agreement is not reached by a cut-off date.</li> <li>Others state that an enforced 50/50 restricts the negotiation ability of councils and MRFs.</li> </ul>	
<b>Do not Support the Following</b>	
<p>Crushed glass to receive a refund due to the high contamination and low quality of the material, and difficulty in accurately weighing the material.</p>	<p>A hands-off approach by Government. Government should have sufficient power to intervene in decisions made by the Managing Agency where it is in the interest of the scheme to do so.</p>
<p>Deposits to be paid on landfill material. This reduces incentives to improve kerbside recycling, increases fraud risks and generates low quality material.</p>	<p>A 25/75 revenue sharing arrangement.</p>
<p>The Managing Agency to own MCFs, as there are conflicts of interest and infrastructure costs will be passed onto the scheme.</p>	<p>MRFs to be a collection refund facility or a processor, due to the increased fraud risk.</p>

Summary of Material Processing Facility Feedback	
<b>Support the Following</b>	
Implementation of contingency infrastructure.	Keeping the two streams, MRF material and MCF material, separate.
Ensuring that community groups can operate collection facilities, and that licences for return-to-retail do not cut across public depots, especially in smaller towns.	Clear and rigorous collection control, auditing and verification programme for MRFs.
Clear and regularly reviewed protocols and standardisation for sorting and processing.	High sorting standards for MRF materials, including sorting by material colour.
The Managing Agency, MCFs and collection points to be separate entities with clearly outlined roles and responsibilities.	CRS materials from MRFs to be owned by MRFs. Members state that limiting the ownership of MRF operators will damage kerbside recycling. Some suggest for the Managing Agency to own CRS materials from collection points but leave kerbside CRS materials to be owned by MRFs.
MRFs to provide a statutory declaration that is independently audited to ensure that containers are sent for recycling.	Processors to receive the materials pre-sorted, especially if they don't receive a handling fee.
<b>Additional Design Considerations</b>	
An aggregated claim method to be considered for all of an operator's MRFs.	Rather than sharing the gross refunds from MRFs, MRFs and councils to share the net financial impact of the scheme that makes up for revenue loss, increases in disposal costs, audit costs, administration costs and impacts from other changes such as gate fees.
Specifications regarding MCFs to be shaped by policy parameters.	

## 7.10 Component(s) to be Included in the New Zealand Container Return Scheme Design

Taking the above key findings into account including feedback from stakeholders involved in the NZ CRS design, the Project Team are of the view that the following components will be included in the NZ CRS design:

- The Managing Agency will contract the scheme Material Consolidation Facility. By exception it may directly own and operate these. All scheme material sold to markets will be owned by the Managing Agency. For clarity, where the processing facility is based on utilising an existing MRF then the contractual arrangement would reflect the appropriate delineation of that site to ensure separation of existing sorting activities and materials from the NZ CRS.
  - The reason why this is appropriate for the NZ CRS design is that contracting the services of the scheme MCF by the Managing Agency will minimise the risk of fraud, maximise the use of existing infrastructure, maximising the number of MCFs around Aotearoa New Zealand and minimising the scheme carbon footprint.

- It is recommended that each region in Aotearoa New Zealand (i.e., 16 regions) will have a dedicated MCF. There may be a requirement for more than one MCFs in a region where it is demonstrated that an additional MCF(s) would lead to improved scheme efficiencies such as transport savings without compromising increased risk of fraud.
  - It is envisaged that establishment of the scheme MCF network would include existing Territorial Local Authority (TLA) owned/contracted resource recovery infrastructure (e.g., resource recovery centres) which could be upgraded/converted to become an expansion of the NZ CRS MCF network.
- Where appropriate and practicable, the Managing Agency will give effect to prioritising the use of existing infrastructure in Aotearoa New Zealand to reduce scheme costs and maximise the opportunity for reuse. For clarity, the MCF and MRF will not be able to operate as one (1) operation but will be able to be situated on the same land footprint with clear delineation between the two entities such as fences and separate equipment to mitigate the risk of fraud.
  - Incorporating where possible, Aotearoa New Zealand's existing infrastructure (e.g., TLA owned/contracted resource recovery infrastructure), will assist in establishing a cost-efficient scheme whilst ensuring recognition of businesses already providing relevant services.
- The Managing Agency will give effect to the incorporation of direct and/or weight-based container counting methodology at scheme material processing facilities (i.e., MCF, MRF, general refuse processing facilities). There is no benefit to limit the options at this stage in the design process. The Managing Agency will have maximum flexibility on options that it determines is best for specific situations. A key area with manual method is a condition that regular auditing must be undertaken to ensure payments made to collection depots reflects the weight to count ratio.
  - Enabling the Managing Agency to have flexibility in specifying the scheme eligible container counting methodology will support a wider range of solutions based on available Aotearoa New Zealand infrastructure.
- The Managing Agency to give effect to the following:
  - The establishment of appropriate fraud mitigation processes and procedures to manage and track the flow of eligible containers through the scheme (i.e., container return facilities, transportation to material processing facilities, transportation to re-processors and/or direct to end-markets).
    - The benefit of this is to ensure the scheme Managing Agency has complete visibility and transparency of the eligible containers moving throughout the scheme, as well as tracking scheme finances against eligible container count.
  - The Managing Agency may approve **baling** of scheme material (e.g., plastic, aluminium) on a case by case basis at selected container return facilities where it is demonstrated that these facilities would contribute to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. To achieve this, the Managing Agency will establish a scheme baling and audit process based on robust standards and procedures, including, for example, a contractual 'Baling Services Agreement' between the Managing Agency and the container return facility. This agreement will be supported by robust standards and procedures such as Standard Operating Procedures that the container return facility must contractually abide by. Additionally, the baling process will be standardised across the scheme so that the same baling process (i.e., weight and size of bale) is used at the container return facility and the scheme MCF ensuring consistency of methodology and minimisation of fraud.
    - The benefit presented by baling at container return facilities is the ability for the Managing Agency to use existing infrastructure whilst contractually managing the expansion of the facility's role and responsibility. Additionally, this approach

- will support the establishment of regional/remote Aotearoa New Zealand collection facilities to also bale and transport material to end-markets under contract with the Managing Agency, thereby improving scheme efficiencies such as transportation of loose material (i.e., payload efficiencies). Further, the Managing Agency is best placed to establish and manage the 'Baling Services Agreement' and the supporting Standard Operating Procedures in order to track scheme material and minimise fraud.
- The Managing Agency may also approve **compaction** of scheme material (e.g., plastic, aluminium) at selected container return facilities where it is demonstrated that these facilities would contribute to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. To achieve this, the Managing Agency will determine the optimised compaction ratio that enables the scheme MCF to re-count and verify eligible scheme containers.
    - The benefit of this approach is the ability of regional/remote Aotearoa New Zealand collection facilities to reduce costs associated with transporting materials to the scheme MCF. Further, the Managing Agency is best placed to manage setting compaction ratios in order to track eligible containers and minimise fraud.
  - The Managing Agency will be responsible for managing the establishment of collection service contracts and/or agreements (e.g., contracted back-haul arrangements, transportation of material by the material purchaser) to be managed by the Managing Agency to deliver the service needed to transport eligible scheme containers from the scheme Material Processing Facility and either the scheme Material Consolidation Facility, material re-processor or direct to end-markets.
    - The establishment of transportation service contracts will ensure that the NZ CRS benefits from a consistent transportation service.
  - Establishing processes to audit scheme eligible glass container return rates collected via kerbside recycling collections to support appropriate MRF glass material handling fee claims.
    - Acknowledging the likelihood of glass breakage in kerbside collections, enabling the Managing Agency to audit kerbside collection bins for scheme eligible glass container return rates will benefit the NZ CRS by ensuring the Managing Agency can verify MRF claims.
  - Establishing criteria to determine weight-based assessment, including the degree of accuracy required for scheme payments to be acceptable to parties.
    - The benefit to Aotearoa New Zealand is that the Managing Agency establishes a consistent weight-based assessment tool.
  - Establishing a scheme MCF, MRF and General Refuse Processing Facility protocol, including all auditing requirements and determine a protocol review period.
    - The benefit of this approach for a NZ CRS is to enable the Managing Agency to have complete transparency and visibility of scheme material processing facility operations as they relate to the successful functioning of the scheme.
  - Establishing a clear and consistent collection, quality control and auditing processes integrating all scheme participants to maintain material quality.
    - The benefit of this approach to a NZ CRS is to ensure that the Managing Agency coordinates and manages all scheme participants to ensure integrity of the scheme to ensure accurate and auditable count of containers and payment to collection depots.
  - Supporting the establishment of a revenue sharing arrangement (deposit or handling fee amount, including a transitional period) underpinned by clear guidelines (e.g., the



default position could have the deposit shared 50/50 between the two parties making sure no party is disadvantaged nor gains a windfall from the NZ CRS with any surplus returned to the ratepayer) between the local council and the MRF for eligible containers collected via kerbside recycling collections. It is recommended each Territorial Local Authority and MRF operator undertake their own negotiations (excluding the involvement of the Managing Agency) and reach agreement on revenue sharing as this recognises the different contractual arrangements that exist across Aotearoa New Zealand. It is also recommended that local authorities use the opportunity of recognising revenue from containers in the recycling bin to offset recycling collection costs incurred by ratepayers (e.g., realising savings through tendering, including, for example, greater collections per unit truck and recognition of these savings as a variable on customer rates). The reason for this is to incentivise the MRF operator to make all appropriate efforts to separate out eligible and redeem containers (in accordance with the scheme container acceptance criteria). Notwithstanding any contractual requirements between MRF operators and local councils it is recommended that a revenue sharing arrangement be established between the local council and the MRF. The revenue sharing arrangement is to be established and set at a level that will support kerbside recycling and incentivise the MRF to fund processing and maximise recovery of eligible containers.

- As noted, the benefit to Aotearoa New Zealand is to ensure that scheme funds generated from council kerbside recycling collections is appropriately shared with the MRF in recognition of the respective contractual commitments and to incentivise continual operational improvements related to the collection and sorting of eligible scheme containers.
    - It is recommended that further detailed analysis is undertaken to determine if the revenue sharing is based on the deposit value or the handling fee, but not both. The detailed analysis would be undertaken to reflect the different collection types, MRF operations, capital investments and scale of these and financial viability across Aotearoa New Zealand to ensure the revenue sharing is fair and reasonable and does not result in unintended consequences or perverse outcomes for the NZ CRS.
    - The default position would be sharing of the deposit value.
  - Requirements for refunds associated with eligible containers recovered from kerbside collected general refuse via waste transfer stations (i.e., those facilities that do not allow public refuse drop-off).
    - As noted in the above bullet point, the benefit to Aotearoa New Zealand is to ensure that scheme funds generated from council kerbside refuse collections is appropriately shared with the waste transfer station in recognition of the respective contractual commitments and to incentivise continual operational improvements related to the collection and sorting of eligible scheme containers to maximise recovery.
    - Maximising the recovery of eligible scheme containers that meet the conditions of acceptance as specified by the scheme requirements (e.g., clean, scheme barcode and/or logo is visible and legible).
  - Ensuring all scheme material sold to markets will be owned by the Managing Agency.
    - The reason why this is good for Aotearoa New Zealand is that the Managing Agency is in the best position to manage this risk and promote the beneficial use of material over the long term. This is beneficial for the Aotearoa New Zealand environment as it will encourage the supply of scheme materials to Aotearoa New Zealand based manufacturers. The Managing Agency may, for

example, enter long-term supply arrangement with material re-processors that results in certainty of supply to enable and assist investment in infrastructure.

## SECTION 8: THE MATERIAL RE-PROCESSOR

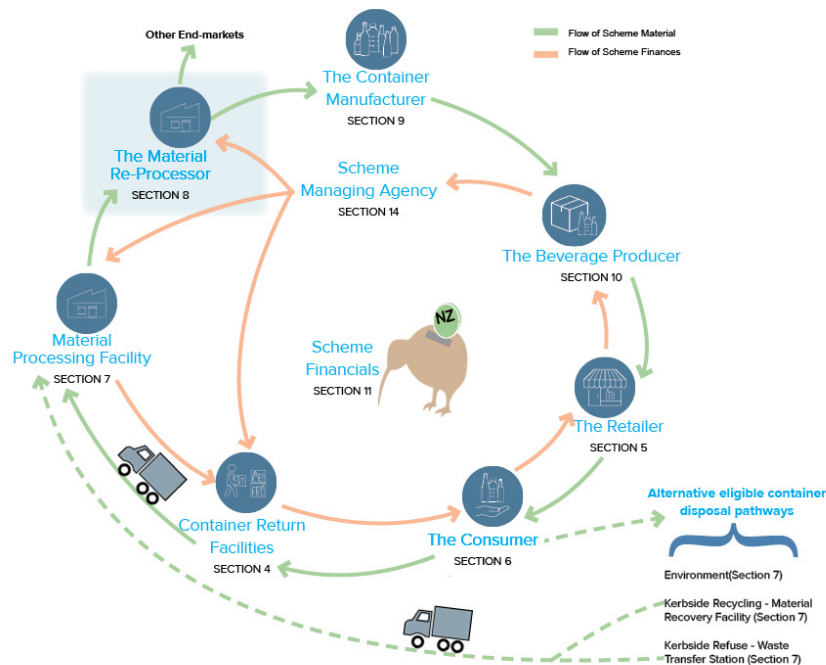
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## Section 8 The Material Re-Processor

As seen in Section 7, the following schematic illustrates the broad mechanism of a NZ CRS design, which includes the roles and relationships of the respective scheme participants and the broad movement of the scheme financials (e.g., the deposit scheme fees and the Advanced Material Recycling Fee). As with many container return schemes, scheme participants (e.g., MCF, Consumer, Retailer) cannot be considered in isolation of one another, as scheme success is underpinned by integrated and interconnected relationships coordinated and fostered by a Managing Agency. In Aotearoa New Zealand the scheme Managing Agency will therefore be tasked with catalysing taupuhipuhi – interdependence and whanaungatanga – relationships across the scheme stakeholders. Focussing on the Material Re-Processor, the facility's role and responsibility in the functioning of a container return scheme is to receive scheme material (e.g., PET, LPB, aluminium, glass) from the MCF (Material Consolidation Facility - Section 7) then prepare these materials suitable for manufacture back into containers and/or other products (Container Manufacturer - Section 9).



To optimise the quality (and value) of collected scheme material sent to and accepted by material re-processors, the sorting process at both the container return facilities (Section 4) and the Material Consolidation Facility (Section 7) needs to account for:

- The container material type – including plastic, glass, aluminium, liquid paperboard;
- The container characteristics – including plastics (polymer type and colour), glass colour, cans (metal type [e.g., aluminium, steel]); and
- Quality of the material – contamination levels.

However, it is acknowledged that some products such as single-use beverage pouches and containers wrapped in complete sleeves, ring-pull lids and bottle caps may present additional sorting infrastructure challenges to separate the component parts (i.e., separation of the label wrapper from the container). It is though acknowledged that these materials may also present opportunities, encouraged through Kaitiakitanga Whakanaonga - Product Stewardship, to create solutions for reuse and/or recycling. In considering the Aotearoa New Zealand context, it is important to note here that Kaitiakitanga

Whakanaonga - Product Stewardship goals need to be considered as part of a wider kaitiakitanga whakanaonga - product stewardship scheme which may result from beverage containers being declared a priority product under the Manatū Mō Te Taiao - Ministry for the Environment General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020.

Notwithstanding the importance of material optimisation at container return facilities and MCFs, kerbside collections (e.g., comingled versus segregated) and household behaviour (e.g., rinsing containers) play important roles in determining the quality and quantity of returned scheme material. Beverage producers must be encouraged to move away from materials that have no immediate end-markets and instead move towards using containers that are more easily re-processed (see discussion on Advanced Material Recycling Fee - Section 11.9). In addition, beverage producers and container manufacturers need to be encouraged to create, where possible, the pull through demand for recycled scheme materials, for example, by including a percentage of recycled scheme material in new container manufacture.

## 8.1 Scheme Awareness

As the point of re-processing the scheme material into products for container production, re-processors have a large role to play in providing products to container manufacturers that meet specific food quality grade criteria and material specifications (e.g., quality of recycled PET flakes, quality of recycled aluminium). To achieve this, re-processors must meet strict criteria and requirements which are often set by scheme Managing Agencies. It is important that re-processors have access to this information through a range of platforms (e.g., scheme website, protocols, material specifications) and are contractually obligated to meet specific criteria to ensure consistent material quality.

## 8.2 Roles and Responsibilities

Across the global container deposit schemes, the roles and responsibilities of material re-processors varies depending on the scheme design. This includes whether the scheme seeks to ensure collected eligible material is re-processed back into food grade eligible containers as a primary output, compared to non-scheme eligible containers and other low-grade recycled products.

For example, in Lithuania, the scheme administrator (Užstato Sistemų Administratorius (USAD)) (i.e., scheme Managing Agency) is responsible for procuring material re-processors through a competitive tendering process ensuring all eligible scheme material is recycled. As reported by USAD, in 2019 the deposit system collected 11,800tonnes of plastic (PET) packaging waste, 18,300tonnes of metal packaging waste and 8,700tonnes of glass packaging waste which was then sent to contracted re-processors for recycling. Consequently, the scheme administrator can track and control the end fate of the eligible scheme material ensuring that material is recycled back into packaging.

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*The degree to which the fate of eligible scheme material is tracked and controlled will be dependent on the design of the scheme (i.e., the degree of control and/or influence the scheme administrator or Managing Agency has on material end fate) and the connectedness of the scheme with a closed loop material cycle and circular economy principles*

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In comparison, as discussed in Section 4.6, in Queensland, Australia, Container for Exchange manages the sale of collected, sorted and processed eligible containers from collection depots and from the Queensland MRFs via an online auction portal where approved registered recyclers<sup>395</sup> (i.e., re-processors) can purchase materials with auction returns reinvested into Container for Exchange to fund the running costs of implementing the scheme. While there was limited publicly available information at the time of writing, the auction portal appears to enable Container for Exchange to audit the trail of sold scheme material up to the sale enabled by the requirement for recyclers to be registered before material can be purchased via the auction portal. Unfortunately, no publicly available information was available at the

<sup>395</sup> Approved recyclers are those organisations that are approved registered Recycling Panel member (Section 4.6 for further information)

time of writing to provide clarity on the specific registration requirements for recyclers or their experience with the auction portal.

Similarly, under the South Australian<sup>396</sup> container deposit scheme, super collectors are responsible for recycling sorted material through markets sourced by the individual organisation as follows:

- Glass containers are sorted by colour and sold to a glass maker for the manufacture of new containers; and
- Aluminium, steel, liquid paperboard and plastic (PET, PVC, HDPE) containers are recycled through markets sourced by the super collector.

As discussed in Section 4, the South Australian super collectors are reported to have the following arrangements in place between them regarding the control of different container materials which has been reported to cause some difficulties with collectors due to several arrangements being required for material types<sup>397,398</sup>:

- Statewide handles all plastic (Polyethylene terephthalate (PET) and high-density polyethylene (HDPE)) and liquid paperboard (LPB) and its own customers' aluminium cans;
- Marine Stores handles all glass containers and its own customers' aluminium cans; and
- Flagcan does not handle any containers but has arrangements in place with Statewide to handle its customers' containers.

However, the South Australian super collectors Marine Stores<sup>399</sup> and Statewide<sup>400</sup> are owned by the manufacturers and as such essentially operate as non-profit centres. As reported by Hudson and Howells for the Government of South Australian and the South Australian Environment Protection Authority<sup>401</sup>, there is likely limited financial incentive for the super collectors to pursue collection system efficiencies.

Subsequently, the degree to which the fate of eligible scheme material is tracked and controlled will be dependent on the design of the scheme (i.e., the degree of control and/or influence the scheme administrator or Managing Agency has on material end fate) and the connectedness of the scheme with a closed loop material cycle and ōhanga āmiomio - circular economy principles<sup>402</sup>.

Section 8.2.1 details the Danish deposit system and the relationship between the scheme Managing Agency and the contracted re-processors ensuring material end fate can be tracked and controlled. The Danish scheme warrants a case study example of the scheme Managing Agency controls in place with the re-processors to ensure transparency in material end fate. Additionally, the Alberta scheme is included as a case study example detailing the relationship between scheme participants and material end-fate, including problematic bottle caps.

<sup>396</sup> Container Deposit Scheme – a South Australian environmental success story, Information Sheet, 2020

<sup>397</sup> Australian Competition and Consumer Commission. AA1000415, 2018

<sup>398</sup> Operation of the South Australian and Northern Territory container deposit schemes, 2012

<sup>399</sup> Marine Stores Pty Ltd, which owned by Lion Pty Ltd (Lion) (through the South Australian Brewing Company Pty Ltd) (75%) and Coopers Brewery Ltd (Coopers) (25%)

<sup>400</sup> Statewide Recycling Pty Ltd, a wholly owned subsidiary of Coca-Cola Amatil (Aust) Pty Ltd

<sup>401</sup> Collection Industry Arrangements under Container Deposit Legislation. Report for the Government of South Australia and the South Australian Environment Protection Authority, 2005.

<sup>402</sup> <https://www.mfe.govt.nz/waste/we-all-have-role-play/responsible-product-management/about-product-stewardship>

### 8.2.1 Danish Case Study

The Danish deposit system referred to as the ‘Dansk Retursystem’<sup>403</sup>, is based on the principle of a closed loop system where the primary aim is to ensure plastic, cans and aluminium containers returned to specific container return facilities (e.g. RVMs in supermarkets or deposit return banks [see Section 4]) are collected and transported to one (1) of two (2) approved Danish facilities for processing. The Dansk Retursystem collects all eligible containers from registered commercial enterprises (e.g., shops, office-based companies, hotels and restaurants, catering companies, festivals, major sporting events, exhibitions) who then counts the packaging and refunds the deposit.

The final step of the Dansk Retursystem closed loop system is the sorting, compression and re-processing of collected containers back into the manufacture of food grade scheme eligible containers. However, where scheme eligible containers are not recycled back through the closed loop system (e.g., contamination), these materials are re-processed either as:

1. Non-scheme food grade packaging (e.g., aluminium trays, plastic cartons);
2. Low-quality non-food grade materials (e.g., plastic for garden chairs, fleece clothing, aluminium for bicycle frames); or
3. Low-quality recycled materials mixed with other substances (e.g., aluminium in asphalt, plastic in carpets, glass in insulation foam).

The intent of the Danish deposit system is to ensure that collected containers are separated by material type so that the material can continue to have adequate quality to be used again for food packaging (i.e., “can to can” and “bottle to bottle”). Further, material quality is managed by strict Danish regulations covering aluminium, plastic and glass that consumers drink from and which sets out, for example, the requirement that aluminium from used beer cans can only be used for the manufacture of new beer cans if it has not been mixed with other aluminium items such as paint cans.

To ensure quality of material is maintained in accordance with relevant regulations and requirements of the scheme, the Dansk Retursystem is reported to carry out regular inspections of the approved container re-processors ensuring that minimal material collected through the scheme is wasted.

Consequently, the strict regulations and requirements placed on the Dansk Retursystem are then also imposed on the processors and re-processors with whom the Dansk Retursystem work with across Europe (i.e., used Danish packaging is sent under contract to European processors who recycle materials into food grade packaging). Before the contractual partnerships are entered into with a processor or re-processor, the Dansk Retursystem carries out an assessment of the recycling performance, including an assessment of the organisation’s certifications and authorisations. To provide ongoing compliance and assurance during the contract term, the Dansk Retursystem also receives regular quality reports from contracted re-processors and undertakes site visits to the contracted facility(ies). These strict process assurance methods implemented by the Dansk Retursystem ensures strict compliance with the scheme requirements and ensures the scheme delivers on the primary purpose to recycle as many empty bottles and cans as possible into new bottles and cans.

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*Re-processors have a large role to play in providing products to container producers that meet specific food quality grade criteria and material specifications (e.g., quality of recycled PET flakes, quality of recycled aluminium)*

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### 8.2.2 Alberta Case Study

In Alberta, the beverage container recycling system is overseen by the system’s regulator, the Beverage Container Management Board (BCMB), as mandated by Alberta’s Ministry of Environment and Parks.

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<sup>403</sup> The Dansk ReturSystem was established in 2000 as a limited-liability company with four owners. The Statutory Order on Deposits specified that the company should be non-profit ensuring that the only purpose of the deposit and return system is to recycle as many empty bottles and cans as possible into new bottles and cans.



The BCMB approves the Alberta Beverage Container Recycling Corporation (ABCRC) to operate under a not-for-profit arrangement for Alberta beverage manufacturers to collect, transport, process and recycle eligible scheme materials<sup>404</sup>. The ABCRC collects eligible scheme containers from approximately 220 independently owned Bottle Depots<sup>405</sup> throughout Alberta with ABCRC operations following the below directives:

- Operate a common collection system for registered containers;
- Be responsible for recycling used, non-refillable beverage containers;
- Comply with the Beverage Container Recycling Regulation and Beverage Container Management Board bylaws; and
- Promote the economic and efficient collection of non-refillable beverage containers.

The effective and efficient operation of the Albertan scheme is underpinned by a partnership approach between the respective scheme organisations to ensure the efficient collection, processing and re-processing of eligible scheme containers. Where information was available, it was reported that ABCRC compacts and bales containers which are sold and shipped to re-processors around North America (note some Tetra Pak and Gable Top containers are reported to be shipped to Asian markets<sup>406</sup>). For example, ABCRC reported that PET has been transported to a Canadian company called Merlin Plastics for more than 20-years which are then recycled into flakes or pellets for use in the manufacture of new food grade beverage containers and clothing<sup>407</sup>. The coloured PET and HDPE was reported by ABCRC to be processed by Merlin Plastics into pellets for use in the manufacture of new non-food plastic products.

In addition, bottle caps which are commonly considered problematic across many global schemes as the caps are a different type of plastic to the container, are collected by ABCRC and sold to the re-processor Merlin Plastics where 98% of the caps are reported to be recycled into a polyolefin blend (a mixture of polypropylene and polyethylene) with 2% reported as contamination and used as an alternative fuel source to heat the boilers at the plant<sup>408</sup>.

Additionally, the ABCRC<sup>409</sup> reported the following material types and re-processor customer including the reported recycled products<sup>410</sup>:

- Aluminium
  - Novelis and Schupan Recycling (United States) – recycled back into aluminium cans. 95%-99% of weight shipped is recycled, with the remainder reported as being moisture and contaminants
- PET (clear), HDPE, PET (green) and other plastics
  - Merlin Plastics (Alberta) – recycled into pellets for use in manufacture of new non-food bottles. 80+% of bottle is reported to be recycled with less than 20% being substandard materials or contaminants. 98% of caps recycled with 2% used as an alternative fuel source.
- Glass
  - Vitreous Glass Inc. (Alberta) – manufacture of fibreglass 95% recycled with 5% waste including caps, corks and dust.

<sup>404</sup> The Alberta Beer Container Corporation (ABCC) is the collection system provider for refillable beer containers

<sup>405</sup> Alberta Bottle Depots are represented by the Alberta Bottle Depot Association (ABDA)

<sup>406</sup> ABCRC Sustainability Report 2018

<sup>407</sup> <https://www.abcrc.com/news/response-to-cbc-article-of-january-7-2020/>

<sup>408</sup> ABCRC Sustainability Report 2018

<sup>409</sup> ABCRC Sustainability Report 2018

<sup>410</sup> <https://albertadepot.ca/recycling-101/what-a-container-turns-into/>

- Gable top
  - The Paper Tigers Inc and ICF Global Inc. (North America) – fibre extracted and used in the manufacture of paper products. 80% by weight is reported to be recycled.
- Tetra-Brik
  - The Paper Tigers Inc and ICF Global Inc. (North America) - fibre extracted and used in the manufacture of paper products. 80% by weight is reported to be recycled. Residual aluminium and plastics reported to be undetermined but noted this may be a potential fuel for gasification (energy recovery). 80% by weight reported to be recycled.
- Drink pouches and Bag-In-A-Box (bladders)
  - Merlin Plastics and Waste Management (cardboard from Bag-In-A-Box) – energy recovery through gasification (incineration) due to low volumes and scarce end markets. Used as an alternative fuel source for coal to power cement kilns. Boxes from Bag-In-A-Box are reported to be recycled as Old Corrugated Cardboard.
- Bi-metal
  - General Recycling Industries Ltd (Alberta) – smelted down for recycling into construction rebar, car parts, and grinding rods for mining. 95% by weight reported with 5% contaminants or moisture.
- Ceramics and aerosol containers
  - Landfill – no viable recycling markets for this material. Ceramics reported to pre-date regulatory requirement for recycling. 12 aerosol containers were reported in 2016 with 2,073 regulated ceramic bottles in 2016.

While there was no clear information noting the requirement for eligible scheme material to be re-processed in and around Alberta, it is clear from where destination information was available that the majority of scheme material is re-processed within Alberta and/or in neighbouring North America. While this principle may not at present be possible in Aotearoa New Zealand, the opportunity exists for Aotearoa New Zealand to be innovative and creative in developing and establishing industries to re-process materials onshore to both increase market value (i.e., re-process PET into flakes or pellets for export commodity markets versus compacted PET containers) and create new employment opportunities.

### 8.2.3 Material Re-Processors and Refillables

As has been discussed in earlier sections, refillable containers (e.g., bottles and/or crates of bottles) are used many times (e.g., in Germany glass bottles are cleaned and refilled up to 50 times and PET bottles around 20 times on average) for filling beverages without undergoing any changes and are typically made of glass or PET plastic<sup>411</sup>. For the purpose of this report and as outlined in Section 3, refillable systems can be defined several ways including:

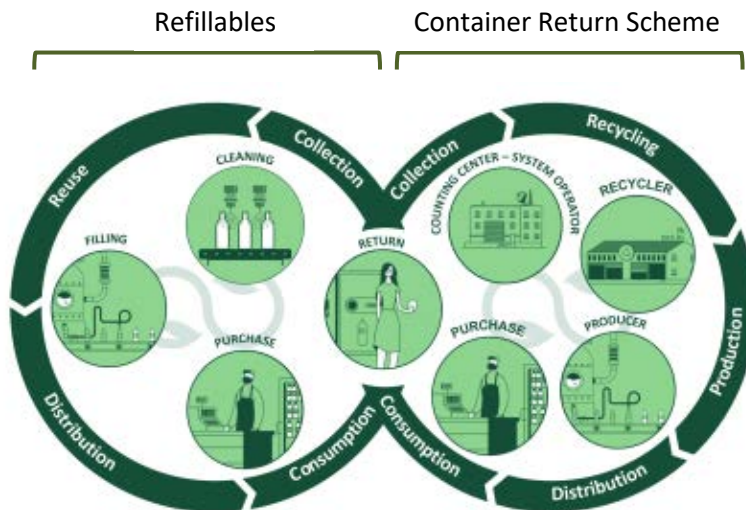
- Bottles that have an associated deposit paid for by the consumer at the time of purchase which is refunded through a reduced price when the empty bottles are returned and replaced (e.g., Associated Bottlers Co. Ltd), or, return of the crate to receive the deposit back (e.g., Oregon Beverage Recycling Cooperative).
- The process by which the consumer pays for a refillable bottle, consumes the product, cleans the bottle and refills at a designated refill stations (e.g., Lewis Road Creamery with milk dispensers at selected Auckland Farro stores<sup>412</sup>, Oaklands Milk Nelson Tasman region<sup>413</sup>).

<sup>411</sup> S. Miller, M. Bolger, L. Copello (2019) Reusable solutions: how governments can help stop single-use plastic pollution. 3Keel, Oxford, United Kingdom. A study by the Rethink Plastic alliance and the Break Free From Plastic movement

<sup>412</sup> [https://www.nzherald.co.nz/the-country/news/article.cfm?c\\_id=16&objectid=12341349](https://www.nzherald.co.nz/the-country/news/article.cfm?c_id=16&objectid=12341349)

<sup>413</sup> <https://www.oaklandsfarm.co.nz/milk-vending-machine-locations>

For the purpose of clarity in developing the NZ CRS design, refillables can be defined as those bottles that have an associated deposit paid for by the consumer at the time of purchase which is refunded through either a reduced price when the empty bottles are returned and replaced, or, return of the crate to receive the deposit back. Further, in the context of a container return scheme, refillables can be either integrated and/or complimentary to a scheme, and may share collection infrastructure, such as, a container return facility (e.g., manual collection depot, Reverse Vending Machine accepting both single-use and refillable containers). Figure 27 below illustrates where a container return scheme and a refillable scheme may intersect (i.e., collection infrastructure) and importantly where key differences exist which broadly includes cleaning and refilling infrastructure for refillable containers compared with recycling (i.e., processing [refer Section 7 for further discussion] and re-processing infrastructure) for single-use containers.



**Figure 27: Container return scheme and refillable scheme re-processing infrastructure**

Looking at refillables in more detail, specifically the re-processing infrastructure needed to broadly clean and refill the bottles a wide range of technology, for example, bottle washing options exist, the processing capacity of which is influenced by, for example, the size of a brewery (e.g., financial and product volume turnover and bottle trippage rate). Additional refillable re-processing technology may include<sup>414</sup>:

- Bottle sorting;
- De-labelling; and
- Bottle quality assurance.

Further, re-processing of refillable bottles may either occur via third party arrangements or by, for example, the brewery (e.g., Heineken<sup>415</sup> and Associated Bottlers Company Limited [refer to Section 3 for further discussion]). However, it is also important to acknowledge here that there are several constraints and challenges to the use of refillable bottles, including but not limited to<sup>416</sup>:

- The dominance of the imports market;
- The growth and expansion of supermarkets (e.g., offer of a larger range of products, larger pack sizes);
- Aesthetics of the bottle (e.g., clean, non-scuffed bottles);

<sup>414</sup> Refillable glass beverage container systems in the UK, 2008

<sup>415</sup> <https://www.vbat.com/en/packaging/durables/heineken-fobo>

<sup>416</sup> Refillable glass beverage container systems in the UK, 2008

- Packaging differentiation (e.g., standardised versus bespoke bottles);
- Infrastructure requirements (e.g., filling and washing equipment); and
- Container lightweighting (e.g., lighter weight glass containers and export markets moving towards lighter weight bottles).

Notwithstanding the re-processing technology utilised by the refillable industry, it is also important to consider the broader refillable container huringa mataora – life-cycle (e.g., transportation, collection infrastructure, container trippage rate) when determining the interface and/or integration within a container return scheme.

Acknowledging that this discussion provides a high-level overview of the potential refillable re-processing infrastructure only, further detailed investigation will be required during the NZ CRS implementation stage to determine the actual infrastructure requirements needed to support a refillable industry in Aotearoa New Zealand through measures such as the NZ CRS financially supporting the establishment and promotion (e.g., fund capital and eliminate financial barriers) of the industry (see Section 17 for further discussion).

### 8.3 Communication with the Managing Agency

Across the global schemes the Managing Agency will have specific arrangements in place with material re-processors depending on the scheme design and whether the scheme is designed to have transparency on the end fate of the eligible scheme material. Where the Managing Agency controls the end fate of the eligible scheme material by direct procurement of re-processors, communication is managed through contractual obligations and via Managing Agency website portals.

As discussed in Section 4.4, the South Australian and Queensland schemes are designed whereby the scheme Managing Agency via the scheme MCF or auction portal are responsible for the sale of the sorted eligible scheme material to the re-processors. In the South Australian scheme, the super collectors comprising Statewide (a wholly owned subsidiary of Coca-Cola Amatil (Australia) Pty Ltd<sup>417</sup>) and Marine Stores (owned by Lion Pty Ltd (Lion) (through the South Australian Brewing Company Pty Ltd) (75%) and Coopers Brewery Ltd (Coopers) (25%)<sup>418</sup>) are owned by the organisations that are also the Managing Agencies of the container return scheme (see Section 8.2) In the case of the Queensland scheme, while contractually a relationship exists between the scheme MCF and the re-processors, the re-processor is likely to have a relationship with the scheme Managing Agency only via the online auction portal where approved registered recyclers<sup>419</sup> (i.e., material re-processors) can purchase materials (refer Section 8.2 for further information).

The following Danish case study provides an example of contractually obligated communication requirements between the re-processor and the Managing Agency ensuring the Dansk Retursystem Managing Agency has full transparency on the end fate of the eligible scheme material.

#### 8.3.1 Danish Case Study

The Dansk Retursystem has the exclusive right to operate the Danish deposit and return system and is also the agency responsible for all scheme activities<sup>420</sup>, including:

*Where the Managing Agency controls the end fate of the eligible scheme material by direct procurement of re-processors, communication is managed through contractual obligations and via Managing Agency website portals*

<sup>417</sup> Statewide Recycling Pty Ltd, a wholly owned subsidiary of Coca-Cola Amatil (Aust) Pty Ltd

<sup>418</sup> Marine Stores Pty Ltd, which is owned by Lion Pty Ltd (Lion) (through the South Australian Brewing Company Pty Ltd) (75%) and Coopers Brewery Ltd (Coopers) (25%)

<sup>419</sup> Approved recyclers are those organisations that are approved registered Recycling Panel member

<sup>420</sup> <https://stateofgreen.com/en/partners/dansk-retursystem/>

- Collection, sorting and counting of containers in two (2) facilities operated by the Dansk Retursystem;
- Transportation of sorted and compressed material to contracted re-processors; and
- Establishing and maintaining contracts with material re-processors.

Notwithstanding the collection, sorting and transportation activities, the Dansk Retursystem through establishing appropriate contracts with material re-processors (see Section 8.2.1 for more information) are in constant communication through mechanisms such as contractual obligations and reporting requirements.

## 8.4 Bulk Transportation of Material

Across the global container return schemes, the bulk transportation of scheme materials from a material processing facility (e.g., scheme MCF, MRF) to the respective re-processor is largely dependent on individual contractual arrangements (e.g., reverse logistics, back-haul contractual arrangements, contracted transport logistics providers) which are either established by the scheme Managing Agency or by the scheme MCF. The financial costs of such arrangements are also based on individual arrangements with the costs driven by the scheme Managing Agency.

In the case of material transportation from a scheme MCF to a re-processor, this is typically undertaken by material type dependent on the re-processor (e.g., PET clear versus PET coloured) and in the form of compressed bales (e.g., aluminium cans) to maximise payload volumes, or transported directly to glass beneficiation plants. The following sections provide case study examples of how material transportation from the scheme MCF to the re-processor is managed across the Danish and Alberta schemes.

### 8.4.1 Danish Case Study

As discussed in Section 8.2.1, the Dansk Retursystem collects all eligible containers from a range of registered organisations, pays the eligible refund then sorts, compresses and sends all used packaging (under contract) to European processors and re-processors to recycle the material back into food grade packaging.

In order to transport the sorted and compressed material to the re-processors, the Dansk Retursystem reports that approximately 65-trucks per day collect eligible containers from approximately 1,000 customers throughout Denmark, with approximately 15,000 shops, offices, restaurants and others participating in the scheme<sup>421</sup>. This means that each of the 1,000 customers is likely to represent a number of individual organisations much like a large retail brand managing several hundred shops. These collected containers are then counted, sorted and compressed by the Dansk Retursystem before material is transported under contract to appropriate re-processors.

Of the plastic, aluminium and glass collected as part of the Danish deposit and return scheme, the following methods of transportation are carried out to the respective re-processor<sup>422</sup>:

- Bales of compressed plastic bottles (approximately 9,000 bottles per bale) are shipped to European re-processors that sort, crush and wash bottles which are then crushed into pieces, turned into flakes and then used for the manufacture of new bottles and other types of packaging for food products;
- Bales of compressed aluminium cans (approximately 21,000 cans per bale) are trucked and shipped to furnaces to melt the aluminium after which the material is extruded and turned into thin foil that is used for the manufacture of new cans; and

<sup>421</sup> <https://stateofgreen.com/en/partners/dansk-retursystem/>

<sup>422</sup> <https://www.danskretursystem.dk/en/use-again-and-again/factory-to-processing/>

- Glass is transported to companies that sort the glass by colour and crush it into smaller fragments which are then smelted down and manufactured into new glass containers.

### 8.4.2 Alberta Case Study

As discussed in Section 8.2.2, ABCRC is reported to transport the majority of eligible scheme material to re-processors within Alberta and neighbouring North America, with Table 15 below discussing the respective transportation distances for each material type. The slight reduction in transport distance between distances reported in 2017 to 2018 is likely representative of transportation efficiencies including, back-haul arrangements, improvements to truck aerodynamics, installations of speed limiters, truck designs (e.g., trailer skirts, trailer tails)<sup>423</sup>.

Further, while there was limited information on onward transportation methods for re-processed material, it is reported that ABCRC contracts a number of transport truck companies to move scheme beverage containers across the Alberta province. As a reported example, ABCRC use Manitoulin Transport Canadian transportation and logistics company that is ISO 14001 certified (recognition of its environmental management systems [EMS]) and a member of the voluntary Canadian SmartWay programme that encourages sustainability and a commitment to clean freight. By using Manitoulin Transport, ABCRC has reported a reduction in carbon dioxide (CO<sub>2</sub>) emissions from transporting scheme beverage containers by 104,321 kilograms since 2016<sup>424,425</sup>.

*The environmental benefits of utilising back-haul arrangements and clean freight transportation partners will be an important design consideration for a NZ CRS given the geographic spread of New Zealand and the potentially large distances between a scheme processing facility(ies) and ports for commodity export*

The environmental benefits of utilising back-haul arrangements and partnering with transportation and logistics companies focussed on clean freight will be an important design consideration (i.e., tapuwae waro - carbon footprint) for a NZ CRS given the geographic spread of Aotearoa New Zealand and the potentially large distances between a scheme processing facility(ies) and ports for commodity export.

**Table 15: Transportation of products from Alberta Beverage Container Recycling Corporation to commodity markets<sup>426</sup>**

Material	Destination	2018km Driven	2017km Driven
Gable Top	North America	364,873 km	451,246 km
Tetra Pak	North America	111,084 km	227,340 km
Aluminium	United States	2,345,009 km	2,297,708 km
Glass	Alberta	185,815 km	191,368 km
PET	Alberta	107,818 km	111,858 km
HDPE	Alberta	213,690 km	219,608 km
Bi-Metal	Alberta	4,119 km	4,832 km

## 8.5 The Aotearoa New Zealand Context

As discussed, the role and responsibility of the Material Re-Processor in the functioning of a container return scheme is to receive scheme material (e.g., PET, LPB, aluminium, glass) from the scheme Material Consolidation Facility (see Section 7 for further discussion) then prepare these materials suitable for manufacture back into containers and/or other products. However, it is acknowledged that some

<sup>423</sup> ABCRC Sustainability Report 2018

<sup>424</sup> <https://albertadepot.ca/>

<sup>425</sup> ABCRC Sustainability Report 2018

<sup>426</sup> ABCRC Sustainability Report 2018

products such as single-use beverage pouches and containers wrapped in complete sleeves, ring-pull lids and bottle caps may present additional sorting infrastructure challenges to separate the component parts (i.e., separation of the label wrapper from the container). However, these materials may also present opportunities, encouraged through Kaitiakitanga Whakanaonga - Product Stewardship, to create solutions for reuse and/or recycling. In considering the New Zealand context, it is important to note here that Kaitiakitanga Whakanaonga - Product Stewardship goals need to be considered as part of a wider kaitiakitanga whakanaonga - product stewardship scheme.

Further, ensuring end-markets are available to accept the collected scheme material, the NZ CRS Managing Agency (see Section 14 for further discussion) will promote a holistic end-to-end solution as well as the outcomes of the pūnaha whakarōpū para - waste hierarchy which may require taking ownership and accountability of the end fate of scheme material. To achieve this, the NZ CRS Managing Agency as owner of the recovered scheme material will ensure that all recovered scheme material is beneficially reused through measures such as:

- Legislative drivers;
- Establishment of long-term contractual arrangements;
- Encourage the use of scheme recycled material for the production of containers;
- Ensure scheme material can have adequate quality to be used again for food packaging; and
- Undertake regular inspections of approved scheme re-processors ensuring that minimal scheme material is wasted.

Acknowledging the availability of end-markets, the NZ CRS must also give consideration to the available onshore material re-processing infrastructure in order to determine whether additional infrastructure (e.g., new build and/or retrofit) is required to support the NZ CRS. This will be particularly important when seeking to support onshore container manufacturers as this is interconnected with the ability of onshore re-processors to provide material that meets the required specifications. The NZ CRS container return facility will also have a significant role in ensuring the collected material is separated according to the NZ CRS requirements. As such, the material re-processor cannot be considered in isolation of the wider scheme participants, particularly, the container return facility and the Material Consolidation Facility as each have a significant role and responsibility in ensuring recovered scheme material meets the requirements of the respective end-market.

## 8.6 Summary of Key Findings

The outcomes of the above research show that material re-processors provide a key service to a container return scheme by providing end-markets for the collected scheme eligible material. Consequently, the material re-processor may also require from either the Managing Agency or MCF contractual conditions of acceptance for material which may include factors such as contamination levels. Therefore, the relationship of the material re-processor is also inter-linked with the design of the scheme and may also influence how scheme eligible material is collected and sorted so as to meet re-processor requirements (captured in the contractual obligations between the parties) and to ensure the highest quality material is available to the commodity markets.

The following conclusions are drawn from the research:

- where the Managing Agency is involved in the fate of scheme material:
  - material re-processors may be procured through a competitive tendering process ensuring eligible scheme material is recycled (Section 8.2);
  - the Managing Agency has greater ability to track and control the end fate of the eligible scheme material with contracted material re-processors (Section 8.2 and Section 8.3);

- the material re-processor must generally meet strict criteria and material specifications (e.g., quality of recycled PET flakes, quality of recycled aluminium) and impose this requirement upon the MCF/Managing Agency (Section 8.1 and Section 8.2);
- the Managing Agency may undertake an assessment of the material re-processors recycling performance, including an assessment of the organisation’s certifications and authorisations (Section 8.2);
- the Managing Agency may undertake regular inspections of the material re-processor ensuring that little material collected through the scheme is wasted (Section 8.2); and
- the Managing Agency may utilise back-haul transportation relationships where possible to reduce the carbon dioxide emissions from transporting scheme beverage containers from the MCF to manufacturers, for example, glass (Section 8.4).
- where the Managing Agency is not involved in the fate of scheme material:
  - the material re-processor sells the product to commodity markets and the Managing Agency generally has limited ability to control the end fate of the scheme material (i.e., ensuring the material is recycled) (Section 8.2 and Section 8.3); and
  - the Managing Agency may have limited visibility on the end fate of the collected scheme material (Section 8.2 and Section 8.3).

Therefore, as with a MCF, the role of the material re-processor in the NZ CRS will be subject to the contractual arrangements reached between the scheme Managing Agency to ensure a closed loop material cycle and *ōhanga āmiomio* - circular economy principles are achieved. For clarity, contractual arrangements between MCF’s and the Managing Agency are separate from revenue sharing arrangements between local councils and their MRF operators.

## 8.7 Summary of Design Feed Received

The following table provides a high-level summary of the feedback received from the Scheme Design Working Group (SDWG) members after reviewing the section information. As many suggestions as possible have been incorporated but the NZ CRS Project Team acknowledge that the wide range of views expressed meant not every edit could be accepted. The NZ CRS Project Team is grateful for those who have provided feedback and where possible these have been used to provide further clarity and context throughout this section and to identify areas requiring further assessment during the NZ CRS implementation stage (Section 17).

<b>The Material Re-Processor Feedback – High-Level Summary</b>	
<b>Areas for further Investigation</b>	
Assessment of Aotearoa New Zealand’s onshore recycling capability, demand and technical capacity for each material, including for higher value products such as PET flakes/pellets (see Section 17 for further discussion).	Cost benefit analysis by material to understand if the Managing Agency can influence higher value outputs (see Section 11 for further discussion).
Contamination limits for imported plastics, and how these will impact the quality of products	If materials are not returned to a beverage container, will the beverage industry be paying for it? (See Section 14 and Section 17 for further discussion).
Ways to ensure that different producers have equal access to the reprocessed material and to ensure transparency of sales so that large producers do not lock others out of buying materials (see Section 14 and Section 17 for further discussion).	Management of conflicts of interests if the Managing Agency owns the scheme material, and ways to ensure that it doesn’t unfairly sell material to itself for an unfair commercial advantage (see Section 14 and Section 17 for further discussion).



<b>The Material Re-Processor Feedback – High-Level Summary</b>	
The competitive tendering process to be undertaken by the Managing Agency for glass (see Section 14 and Section 17 for further discussion).	A comparison between contractual relationships, tendering and the auction portal (see Section 17 for further discussion).
If the Managing Agency will sell materials for the best price or prioritise onshore re-processors (see Section 14 and Section 17 for further discussion).	The relationship between CRS and wider kaitiakitanga whakanaonga - product stewardship schemes (see Section 12 for further discussion).
How onshore facilities will be incentivised for development, and how legislation can be used to attract investment (see Section 14 and Section 17 for further discussion).	
<b>Opposing Views</b>	
<p>Mandating that recycled materials are used in bottle-to-bottle:</p> <ul style="list-style-type: none"> <li>Members for are in favour of the circular economy, state that reuse of glass in roads would be downcycling and also suggest can-to-can.</li> <li>Members against state that the Managing Agency should deliver commercial outcomes and sell materials to the highest bidder who will reuse the material, but not necessarily in a bottle, and that some materials cannot be reused in beverage containers such as coloured PET</li> </ul>	<p>Mandating onshore recycling:</p> <ul style="list-style-type: none"> <li>Members for support the surety of local products and the increase of local jobs, especially for communities and social enterprises.</li> <li>Members against state that exporting materials can still be used for circularity and can help drive competition</li> </ul>
<p>The Managing Agency to own scheme materials:</p> <ul style="list-style-type: none"> <li>Members for state that this will ensure that the Managing Agency verifies that material is recycled.</li> <li>Members against state that other options should be explored to ensure material is recycled such as incentives, regulation and contracting, and have a concern of monopoly ownership</li> </ul>	<p>The auction platform:</p> <ul style="list-style-type: none"> <li>Reasons for include ensuring that market value is achieved by the Managing Agency and minimising the need for the Managing Agency to physically receive the material, reducing transport foot-printing.</li> <li>Reasons against include the use of competitive tendering and contractual agreements to drive highest and best resource reuse, and that the portal financially supports beverage suppliers but disadvantages MRFs</li> </ul>
<b>Do not Support the Following</b>	
Long-term contracts by the Managing Agency. Other processes for achieving market rates with audited contracted parties is preferred as a first step, with a choice to enter into longer term agreements later on	
<b>Support the Following</b>	

<b>The Material Re-Processor Feedback – High-Level Summary</b>	
The ability of the Managing Agency to trace where materials are sold to and verify that materials are recycled. Transparency of end markets to be communicated to the public	Agreements to be in place with market buyers for transparency purposes
Back-haul transport, however acknowledging seasonal peaks and access difficulties	
<b>Additional Design Considerations</b>	
Re-processors to be funded as part of the handling fee	A hierarchy or rating for reuse considering items such as emissions and the circular economy
MRFs to sort the material to a required standard in order to receive the refund amount	Promotion of the waste hierarchy during the sale of the scheme materials

## 8.8 Component(s) to be Included in the New Zealand Container Return Scheme Design

Taking the above key findings into account including feedback from stakeholders involved in the NZ CRS design, the Project Team are of the view that the following components will be included in the NZ CRS design:

- The Managing Agency as owner of the recovered scheme material will give effect to the following:
  - Ensuring that all recovered scheme material is beneficially reused through measures such as legislative drivers, establishment of long-term contractual arrangements, encourage the use of scheme recycled material for the production of containers, ensure scheme material can have adequate quality to be used again for food packaging, undertake regular inspections of approved scheme re-processors ensuring that minimal scheme material is wasted.
    - The benefit of this approach to Aotearoa New Zealand is that the NZ CRS promotes a holistic end-to-end solution requiring the Managing Agency to take ownership and accountability of the end fate of scheme material and the Managing Agency is enabled to promote the outcomes of the pūnaha whakarōpū para - waste hierarchy.
  - Working with the material re-processor to optimise scheme collection and sorting methodologies to lift material quality.
    - The reason why this is good for Aotearoa New Zealand is to require scheme participants and associated industries to carry out more robust sorting and collection of materials to reduce contamination levels whilst encouraging the production of higher value products (e.g., PET flakes and PET pellets) for sale to markets and material re-processors.
  - Ensuring the Managing Agency controls and/or has full transparency of the end fate of scheme materials (i.e., closed loop system) via, for example, contractual relationships or competitive tendering processes with re-processors (e.g., long-term contracts, process to achieve market rates with known contracted parties), encouraging minimum scheme recycled material for the production of containers, re-purposing of materials, ensure

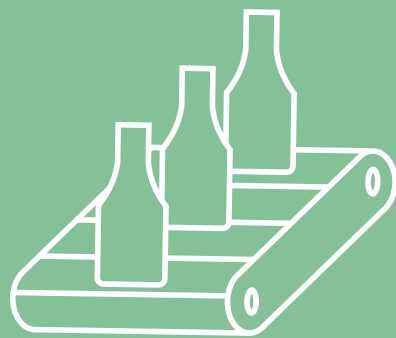
scheme material can have adequate quality to be used again for food packaging, undertaking regular inspections of approved scheme re-processors ensuring that minimal scheme material is wasted.

- The benefit to Aotearoa New Zealand is ensuring that scheme material is, where possible (noting recycled scheme material may also be sold and exported to offshore markets) recycled in a closed-loop cycle with the Managing Agency promoting the use of 'bottle to bottle' and 'can to can' processes, whilst promoting and supporting onshore material re-processing activities and investments in infrastructure.
  - Optimising the establishment of contractual arrangements to include material end fate and recyclability requirements of scheme material.
    - The reason why this is good for Aotearoa New Zealand is that the Managing Agency will encourage and promote Extended Producer Responsibility through the use of an Advanced Material Recycling Fee to ensure producers cover the true cost to beneficially use their respective container materials. This approach will also help encourage producers to move to more recyclable materials, thereby promoting and delivering the objectives of the scheme.
  - Undertaking regular audits and inspections of the material re-processor to ensure minimal scheme material is wasted and scheme material is recycled in accordance with contractual agreements.
    - The benefit of this approach for a NZ CRS is to enable the Managing Agency to have complete transparency and visibility of operations as they relate to the successful functioning of the scheme.
  - Utilise back-haul transportation relationships where possible to reduce the carbon dioxide emissions from transporting scheme beverage containers to material re-processors or end-markets.
    - The benefit of this approach to Aotearoa New Zealand is to support Aotearoa New Zealand's goal to reduce greenhouse gas emissions and progress New Zealand's obligations under the Kyoto Protocol. The added benefit is to utilise existing infrastructure to support scheme activities whilst encouraging scheme employment.
- The Managing Agency will promote and encourage the development of the refillables market through options including, but not be limited to:
  1. Funding and promoting the benefit and awareness of refillables as a preferred choice to New Zealanders.
  2. Working closely with existing and future New Zealand refillable schemes to identify and remove barriers to their growth, irrespective of whether existing or future refillable schemes choose to be included within a NZ CRS or not. This approach recognises and provides for individual companies to manage and promote their own unique refillable containers and where companies may wish to share a universal bottle.
  3. Further to item 2, investment in, or funding of, infrastructure by addressing and removing barriers such as the return, re-washing and refilling of bottles.
  4. Ensuring that the method of return by customers is convenient, accessible and where appropriate and practicable is compatible with existing NZ CRS container return facilities.
  5. Establishment of NZ CRS container return facilities that, where practicable, can accept, sort and store for transportation both eligible single-use beverage containers and reusable beverage containers.
  6. Support and facilitate the uptake of reusables through the integration of strategic directives embedded within the NZ CRS scheme performance indicators.
  7. Securing the funding to achieve the above from the scheme fee.



## SECTION 9: THE CONTAINER MANUFACTURER

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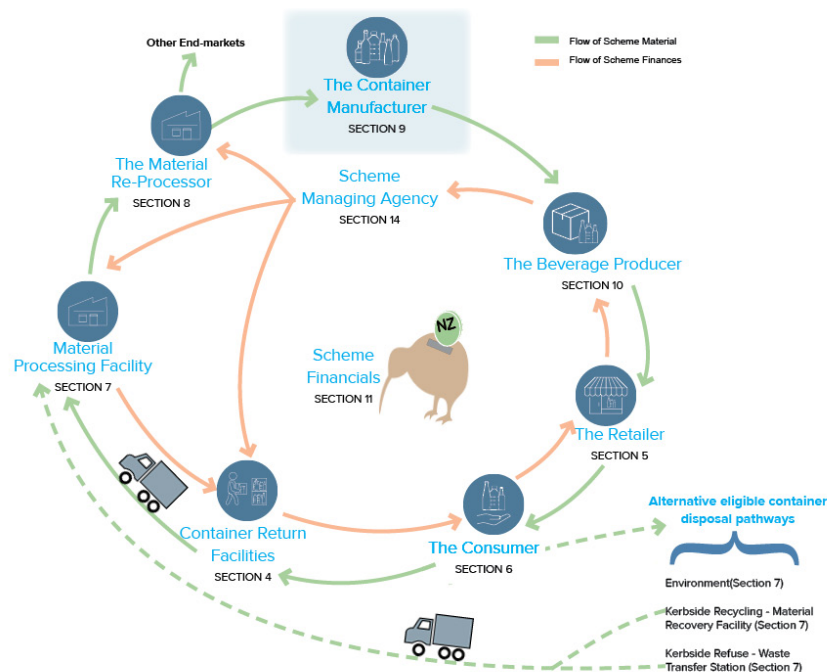




## Section 9 The Container Manufacturer

As seen in previous sections, the following schematic illustrates the broad mechanism of a NZ CRS design, which includes the roles and relationships of the respective scheme participants, including the container manufacturer, and the broad movement of the scheme financials (e.g., the deposit, handling fee, administration fees and the Advanced Material Recycling Fee). As with many container return schemes, scheme participants (e.g., MCF, Consumer, Retailer) cannot be considered in isolation of one another, as scheme success is underpinned by integrated and inter-connected relationships coordinated and fostered by a Managing Agency. In Aotearoa New Zealand the Managing Agency will therefore be tasked with catalysing taupuhipuhi – interdependence and whanaungatanga – relationships across the scheme stakeholders.

As illustrated in the below schematic, container manufacturers are defined as manufacturers of eligible packaging and containers, while beverage producers (discussed further in Section 10) are defined as manufacturers of the drinks that go into the containers created by the container manufacturers. Each scheme refers to container manufacturers and beverage producers differently, often identifying them as manufacturers, suppliers, brand owners or bottlers. Sometimes, depending on the company, beverage producers and container manufacturers are one and the same. Because of some of the similarities in their roles, some of the information discussed below is also relevant for beverage producers, which are discussed in Section 10. Where this occurs, it has been identified in the sections below and in Section 10.



It is important to understand the responsibilities of and implications on container manufacturers as they are directly affected and involved in new schemes. While the main purpose of schemes is often to shift the cost and responsibility of managing container packaging onto producers and consumers, this responsibility falls on the beverage producers rather than the container manufacturer<sup>427</sup>.

<sup>427</sup> DSM Environmental Services, Inc., 2007, The Costs of Beverage Container Redemption in Vermont.

In most existing schemes, container manufacturers are responsible for:

- Supplying empty eligible packaging to beverage producers; and
- Incorporating where possible post-consumer recycled materials in the manufacture of new containers (this is usually the contract responsibility of beverage producers who would pass on that requirement to their container manufacturers).

The sections below discuss how container manufacturers have been impacted in existing global schemes. The experiences of container manufacturers are categorised by the below:

- Impacts on container manufacturing, including:
  - Container labelling;
  - Container materials;
  - Recycled content in manufacturing;
  - Cost on the container manufacturer;
  - Market placement;
  - Environmental benefits; and
  - Economic benefits and incentives.

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*Most schemes require eligible containers to be labelled as decided by legislation. Container producers (and beverage producers) are commonly required to update their existing container designs to include a scheme logo, a barcode and the deposit or refund amount*

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## 9.1 Container Manufacturer Experience

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Container manufacturers are required to ensure that their eligible containers that are supplied to the market are manufactured in accordance with the regulations. The conditions of acceptance for the containers in the different existing schemes have been discussed in Section 3. The impacts that these changes have on container manufacturers are discussed below.

### 9.1.1 Impact on Container Manufacturing

#### 9.1.1.1 Container Labelling

In most situations, the responsibility to apply the container label falls on the beverage producer. The impact of labelling requirements on manufacturing is discussed in detail in Section 10. If the container manufacturer and beverage producer are the same organisation, then the requirements of container labelling will also fall on to them.

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*A beneficial outcome of schemes is that they generate a local stream of clean recycled materials for container producers to use in their new containers. Reusing materials collected from a scheme can offset the initial costs with participating in the scheme*

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#### 9.1.1.2 Container Materials

If container return schemes influenced the container material choices that beverage producers made, then container manufacturers were also impacted. Section 10 discusses how schemes have influenced some beverage producers to change their container materials for several reasons, including, to avoid participating in the scheme, or to offset the costs of supplying into the scheme. The container manufacturers for those beverage producers would have been impacted by losing business or being pushed towards manufacturing using new materials for their existing beverage client.

#### 9.1.1.3 Recycled Content in Manufacturing

A beneficial outcome of schemes is that they generate a local stream of clean recycled materials for container manufacturers to use in their new containers<sup>428</sup>.

Except for the glass industry in Germany, most schemes seem to have received positive impacts. Glass container manufacturers in Germany have noted that the quality of crushed glass that is taken

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<sup>428</sup> Eunomia Research & Consulting, 2011, Options and Feasibility of a European Refund System for Metal Beverage Cans



from the collected scheme glass has decreased. Glass producers have said that this was because the scheme meant that the bottles were not pre-sorted by colour like they used to be before the scheme<sup>429</sup>.

Additionally, three (3) states in the United States of America (California, Washington and Oregon) have implemented legislation to mandate the use of recycled content in plastic containers including bottles. In September 2020 California State and Washington State passed bills to mandate recycled content in the manufacture of plastic bottles. The California Beverage Container Recycling and Litter Reduction Act (AB 2020) requires that all plastic bottles included in the container redemption program to use at least 15% post-consumer resin from 2022, increasing to 25% in 2025 and 50% in 2030<sup>430</sup>. Washington State legislation requires beverage containers to have 10% recycled content from 2022, 25% in 2025 and 50% in 2030<sup>431</sup>. The state of Oregon legislation (Rigid Container Recycling Law) which requires 25% recycled content in the manufacture of rigid plastic containers<sup>432</sup>.

#### 9.1.1.3.1 Canada

In Canada, container manufacturers reuse many materials collected from the scheme in their new bottles. The below information identifies some of those materials:

- 40% to 60% of glass collected from Canadian schemes is used to manufacture new bottles. Refillable beer is the most recovered beverage container, with no province with a scheme having a collection rate lower than 91%. The Canadian brewery industry's refillable bottles are estimated to contain an average of 70% recycled glass material. A large amount of returned eligible wine, spirit and beer container glasses are sold to Owens-Illinois for bottle-to-bottle manufacturing at a plant in Ontario<sup>433</sup>.
- Approximately 25% of collected PET from the scheme is turned into food and beverage containers.
- The average aluminium can in Canada contains 70% recycled content by weight. 43% of the recycled content is from post-consumer packaging such as beverage cans.

Container manufacturers have identified environmental and economic benefits to using recycled materials in their new eligible containers. These include the below:

- Where refillable glass bottles are collected, these can be continuously recycled without any loss of quality or purity. The glass bottles can be reused 15-times before they are thrown away, however their aesthetic can decrease after several uses as marks and scuffs become more noticeable every time they are reused. Additionally, it has been reported that refillable glass bottles enable higher circulation rates of up to 50 turnovers compared with reusable PET bottles, but acknowledges the rate is dependent on, for example, breakage resistance of the bottle, stability of the packaging and material wear<sup>434</sup>.
- Making PET bottles (clear PET is commonly used to make new PET bottles) out of recycled resin uses approximately 2/3 less energy than using virgin materials. This is equivalent to energy contained in approximately 11-barrels of oil, for every tonne of plastic.

<sup>429</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>430</sup> <https://resource-recycling.com/plastics/2020/09/02/california-mandates-recycled-material-in-beverage-bottles/>

<sup>431</sup> <https://resource-recycling.com/plastics/2020/02/18/recycled-content-bill-advances-in-one-state-legislature/>

<sup>432</sup> <https://www.cmconsultinginc.com/wp-content/uploads/2018/10/WPW-2018-FINAL-5OCT2018.pdf>

<sup>433</sup> CM Consulting, 2018, Who Pays What - An Analysis of Beverage Container Collection and Costs in Canada

<sup>434</sup> Reuse and Recycling Systems for Selected Beverage Packaging from a Sustainability Perspective: An analysis of the ecological, economic and social impacts of reuse and recycling systems and approaches to solutions for further development, 2011. PwC report for Deutches Umwelthilfe e.V. & DUH Umweltschutz-Service GmbH

- Aluminium is a product that can work in a closed loop process where it can be continuously remade into new containers with the entire process taking as little as 60-days. Aluminium cans that consist of recycled materials use only 8% of the energy needed to use the same amount of virgin materials<sup>435</sup>.

Further information on the environmental benefits experienced by container manufacturers is discussed in Section 9.2.1.3.

#### 9.1.1.3.2 Unites States of America

According to the Glass Packaging Institute, it is estimated that 65% of recycled glass in America originates from ten American states with container refund schemes. According to an American organisation, Conservation Minnesota, container manufacturers that use recycled materials from schemes in America have said that their recycled product is cleaner when acquired from a scheme. This also means that container manufacturers have less contamination to deal with and less waste for them to manage. Savings are inherently experienced this way by container manufacturers<sup>436</sup>.

In Massachusetts (approximate population of 6.9million), it is cheaper for container manufacturers to use recovered materials from the scheme than to use virgin materials. A study undertaken for a possible expansion of the scheme in Massachusetts estimated the following net employment gains that would be acquired from having a larger stream of recycled contents for container manufacturers (the net amount considers jobs losses from the lack of use of virgin materials, and jobs losses in waste transfer and disposal operations)<sup>437</sup>.

- For glass, 0 to 4 employment gains.
- For PET, 50 employment gains.
- For HDPE, 37 employment gains.
- For Aluminium, 0 to 1 employment gains.
- For Steel, 0 to 1 employment gains.
- A total employment gain of 88 to 92.

When a state scheme was being proposed for Minnesota, several container manufacturers commented on their predicted impacts from the scheme. Verallia, a global producer of glass packaging, commented that approximately 40% of single stream glass received by beneficiaries can be economically prepared to a suitable quality for glass containers. In comparison, through a state scheme, 99.5% of collected glass can be prepared for glass container manufacturing. According to Verallia, a scheme would lead to higher quantities of glass going into higher value recycled products. Similar benefits would be experienced by PET manufactures, with the improved quality of collected PET benefitting manufacturers who will be able to recycle PET into their bottles. A state scheme was hence said to result in a bigger local market for recovered materials, which would become available to state manufacturers. Additionally, this would reduce costs for manufacturers and lead to increased sales and job growths. According to Conservation Minnesota, container manufacturers have been demanding greater input of recycled materials in their manufacturing as commodity was being lost in landfill. Hence, a state scheme would aid producers with their input materials<sup>438</sup>.

As part of its scheme, California has mandated recycled content for container manufacturers. California's Rigid Plastic Packaging Container Law, passed in 1991, mandates that product manufacturers

<sup>435</sup> CM Consulting, 2018, Who Pays What - An Analysis of Beverage Container Collection and Costs in Canada

<sup>436</sup> Minnesota Pollution Control Agency, 2014, Increasing recycling of beverage containers in Minnesota: Recommendations for a state-wide recycling refund program.

<sup>437</sup> Sound Resource Management Group, 1998, Economic & Environmental Benefits of a Beverage Container Recycling: The Case for Updating Massachusetts' Bottle Bill

<sup>438</sup> Minnesota Pollution Control Agency, 2014, Increasing recycling of beverage containers in Minnesota: Recommendations for a state-wide recycling refund program.

must use 25% post-consumer recycled content in plastic containers. This can be exempted if containers can be reused or refilled at least 5-times or are light weighted by 10%<sup>439</sup>. This ensures container manufacturers will reuse the materials collected locally from the scheme.

## 9.2 Impact on Container Manufacturers

### 9.2.1.1 Cost on the Container Manufacturer

Cost implications on container manufacturers vary greatly depending on the different scheme designs<sup>440</sup>. The sections below discuss different pricing mechanisms placed on container manufacturers in different countries.

#### 9.2.1.1.1 Australia

In New South Wales and the Australian Capital Territory, responsibility for funding the scheme falls on the party that is identified as the first to supply the eligible product into the market. This party is labelled under the scheme as the “first supplier” and can be a container manufacturer, a beverage producer, a wholesaler, a retailer and whoever else may have that role. In most situations, it is the beverage producer who is identified as a first supplier. A detailed explanation of how to identify first suppliers and their responsibilities is provided in Section 10. In the other Australian states, the responsibility for scheme liability falls immediately on beverage producers.

Consequently, in most cases, container manufacturers are not required to pay for the costs of the scheme and are only impacted if the cost of manufacturing is changed and if contract arrangements with beverage producers are impacted.

In New South Wales, beverage producers are required by law to ensure that their containers do not have a ring-pull lid, in order to avoid the creation of another litter stream<sup>441</sup>. At the time of writing this report, there was no publicly available information found on the impact of this container design requirement on container manufacturers. However, it can be assumed that container manufacturers have had to update their manufacturing to create compliant eligible containers without ring-pull lids. This design requirements may have added costs onto container manufacturers associated with changing their manufacturing processes and / or container designs.

#### 9.2.1.1.2 United States of America

In many American states, scheme liability and funding, similar to New South Wales, falls on the party identified as the “Deposit Initiator”. The deposit initiator is identified as the first party to accept the deposit on a product that’s sold to someone else. Container manufacturers can fall under this category, however in most situations it will be the beverage producer who is the deposit initiator. Hence this role is discussed in more detail in Section 10.

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*Cost implications on container producers vary greatly depending on the different scheme designs. In general, container producers are economically impacted as schemes require them to change their container designs*

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#### 9.2.1.1.3 Europe

A study undertaken by Prognos studied the impact of the German scheme on different scheme participants. The study applied a macroeconomic input-output model to find the direct monetary effect of the implementation and operation of the scheme. The study found that there was a negative impact on can and glass bottle manufacturers of 2,100 and 800 employees respectively, however a positive impact on plastic bottle and carton manufacturers of 2,600 and 500 employees<sup>442</sup>.

<sup>439</sup> CM Consulting, 2018, Who Pays What - An Analysis of Beverage Container Collection and Costs in Canada

<sup>440</sup> : Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>441</sup> NSW EPA, 2019, NSW Supplier Obligations.

<sup>442</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

### 9.2.1.2 Market Placement (including Refillables)

Container return schemes can have an impact on the market placement from different container manufacturers, with the most obvious impact on the refillable packaging industry. The following case studies provide examples of the impact of container return schemes on the market placement.

#### 9.2.1.2.1 Canada

The decrease in the market share of reusable/refillable containers can be seen in most of the schemes in Canada. Between 2009 and 2017, the market share for beer sold in glass dropped from 59% to 30% in all of Canada. Several factors were said to contribute to this. One of the factors was said to be related to retailers wanting to stop the sale of refillable beer bottles as it reduces the labour requirements of taking them back. Another reason is that beverage producers of single-use packaging generally only incurred a share of the end of life management costs, whereas beverage producers using refillable beverage containers incurred the full costs of collection and refill. Other reasons also included consumer preferences, single-use packaging being lighter in weight and changes in prices of container materials.

In Canada, the following market share is known for different materials:

- Aluminium has the highest market share of all competing non-refillable packaging.
- PET plastic is the second most common non-refillable package and in 2016, made over 25% of the beverage container market.
- HDPE is reported to be similar to the PET market.
- Steel and Bi-Metal cans make up approximately 2% of Canada's beverage container market<sup>443</sup>.

While it is uncertain whether the introduction of a container return scheme is directly linked to changes in market share of materials and/or products, the market share for refillable bottles has dropped in most of Canada, however refillable glass beer bottles remain popular in Ontario and Quebec. Both are however still experiencing large declines. Between 2008 and 2016, the percentage of sold refillable beer bottles dropped from 76% to 54%. In Quebec in 2009, 83% of beer was sold in refillable glass containers. British Columbia was said to have experienced a similar decline to Ontario<sup>444</sup>.

#### 9.2.1.2.2 Europe

According to the study undertaken by Prognos in 2008, the German scheme has failed to meet its objective of increasing the market share of refillable containers with refillable packaging producers were in fact seeing a decrease in their market share.

Prior to the introduction of the scheme in 2002, refillable packaging had a market share of 58% in the German beverage packaging market. When the scheme was first implemented in 2003, the market share of refillable containers temporarily rose to 65%. However, over the following three years, it decreased by 12%. By 2006, the market share was 53%. For refillable water containers, the market share decreased by 23%. For container manufacturers of refillable beer however, the market share increased. The relatively high market share of refillable beer bottles is attributed to a well-established brewery collection and filling system, and the lower deposit on refillable containers.

In total, between 2002 and 2006, single-use plastic packaging rose by 12%, refillable glass decreased by 10% and cans decreased by 7% with the market share of steel cans becoming almost non-existent. A study by DG Enterprise found that from May 2006, most drinks were packaged in single-use PET and glass bottles, cans, cartons and pouches, however while the reasons for this are unclear it is likely that a range of factors including market forces driving cheaper market placement of products. Even though

<sup>443</sup> CM Consulting, 2018, Who Pays What - An Analysis of Beverage Container Collection and Costs in Canada

<sup>444</sup> CM Consulting, 2018, Who Pays What - An Analysis of Beverage Container Collection and Costs in Canada

cartons and pouches were exempt from the scheme, the survey did not find evidence of container manufacturers taking advantage of this<sup>445</sup>.

A review undertaken by the German Environment Agency in 2010 stated that more efforts should be placed on encouraging the use of reusable packaging. This included the introduction of two different labels that read "ONE-WAY" or "REUSABLE". The agency also recommended introducing public awareness campaigns to promote the use of reusable packaging<sup>446</sup>.

In Sweden, breweries have switched to non-refillable containers because of the practicalities, costs and consumer preference of non-scratch single-use containers. Like Germany, the market share of refillable packaging has decreased and has increased for single-use packaging<sup>447</sup>.

In Denmark, many container manufacturers have changed their refillable packaging to single-use packaging. Their reasons for changing the packaging include:

- Refillable bottles are collected by breweries themselves. By changing to single-use packaging, the collection and sorting is managed and sorted by the Managing Agency, making things logistically easier for producers.
- Marketing a single-use bottle is easier because refillable bottles can appear less attractive to consumers with their marks and chips<sup>448</sup>.

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*Implementation of a container return scheme can enable better use of resources and create a continuous local stream of material feedstock - 'can to can' or 'bottle to bottle' future.*

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### 9.2.1.3 Environmental Benefits

Several studies on existing schemes have shown that there are environmental benefits experienced by container manufacturers for different materials used. The environmental benefits often also lead to cost savings.

One of the main environmental outcomes is that a lot less energy is required to turn collected containers into materials that can be used in the manufacturing of new containers. This leads to a decrease in manufacturing emissions into Papatūānuku such as air and water emissions<sup>449</sup>. As has been discussed previously, where refillable containers are produced and used these can be refilled multiple times with O-I reporting refill rates about 25-times for refillable glass bottles with a production resulting in 66-times less CO<sub>2</sub> emissions per container compared with aluminium cans<sup>450</sup>. In Aotearoa New Zealand, the Associated Bottle Company Ltd swappa-crate refillable bottle scheme has shown beer bottles are typically reused 40-times<sup>451</sup>. This increase in reuse is expected to result in even further CO<sub>2</sub> emission savings than that experienced by O-I.

As reported by O-I Glass, the average tapuwae waro - carbon footprint of refillable glass containers in Latin America and Western Europe is 0.006kgCO<sub>2e</sub> (carbon dioxide equivalent) per container compared to between 0.110kgCO<sub>2</sub> and 0.117kgCO<sub>2</sub> per glass container in the same regions (Figure 28).

<sup>445</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK

<sup>446</sup> Directorate General for External Policies of the Union - Policy Department, 2011, A European Refunding Scheme For Drinks Containers.

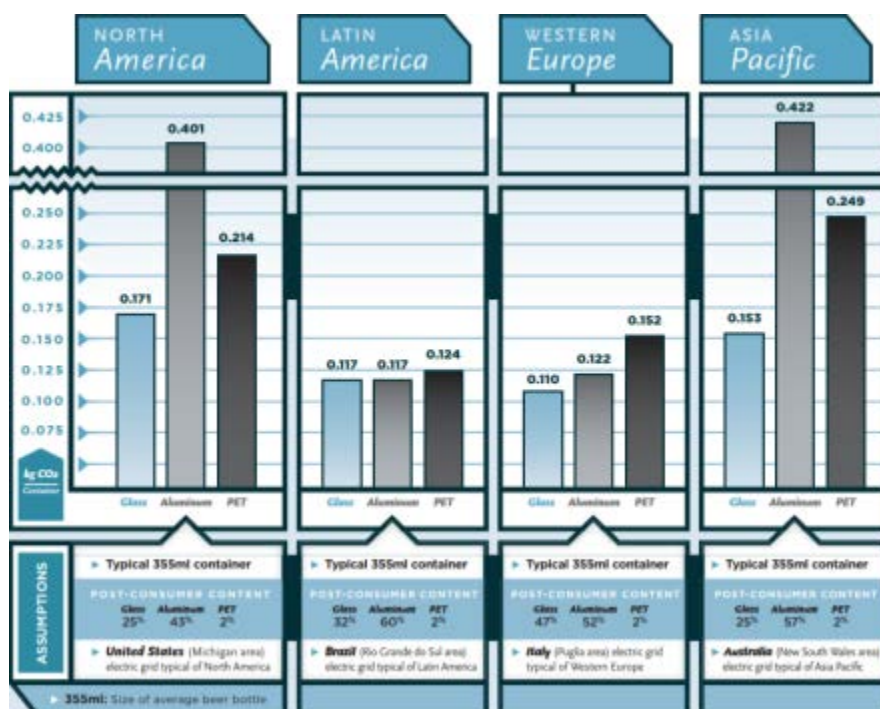
<sup>447</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>448</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>449</sup> Is a National Bottle Bill Worthwhile?, available from: <https://www.recyclingtoday.com/article/is-a-national-bottle-bill-worthwhile/>

<sup>450</sup> 2018 O-I Corporate Social Responsibility Update

<sup>451</sup> The Associated Bottlers Co Limited, Presentation to NZ CRS Scheme Design Working Group 18 March 2020



**Figure 28: Comparing carbon footprints of the most commonly used carbonated beverage containers in O-I's four global operational regions<sup>452</sup>**

Further, refillable glass containers have been reported to achieve up to 95% lower tapuwae waro - carbon footprint than single-use glass bottles due to savings associated with washing and reusing the refillable containers compared with recycling glass which generally requires the addition of virgin glass<sup>453, 454</sup>.

In Sweden, the use of recycled aluminium from the scheme has saved about 95% of energy compared to the use of virgin materials<sup>455</sup>. According to Conservation Minnesota, a 2013 report by the Container Recycling Institute has stated that the following environmental benefits have been experienced from the existing schemes in the United States of America:

- Between 2000 and 2010, the production of aluminium cans from materials collected in schemes has emitted 67million less metric tonnes of carbon dioxide equivalent (MtCO<sub>2</sub>e) nationwide than if raw materials were used.
- Using recovered plastic in eligible containers has emitted 30million MtCO<sub>2</sub>e less than if raw materials were used.
- Using recovered glass in eligible containers has emitted 19million MtCO<sub>2</sub>e less than if raw glass materials were used<sup>456</sup>.

*A lot less energy is required to turn collected containers into materials that can be reused in the manufacturing of new containers. This leads to a decrease in manufacturing emissions such as air and water emissions.*

*In Sweden, the use of recycled scheme aluminium has saved about 95% of energy compared to the use of virgin materials*

According to the Canadian Glass Packaging Institute, using recycled glass in manufacturing plants results in lower greenhouse gas emissions because using recycled glass allows for a reduction in furnace temperatures that result in reduced energy use. One (1) tonne of carbon dioxide is reduced for every six

<sup>452</sup> The Complete Life Cycle Assessment, O-I Glass, no date noted

<sup>453</sup> The Case for Refillable Glass in New Zealand, Green Bottle NZ, 2020

<sup>454</sup> Project Green Bottle – Report on Potential Environmental Impacts, Eunomia, 2012

<sup>455</sup> Zero Waste Scotland, year unknown, Deposit return in Sweden - A case study.

<sup>456</sup> Minnesota Pollution Control Agency, 2014, Increasing recycling of beverage containers in Minnesota: Recommendations for a state-wide recycling refund program.

(6) tonnes of recycled container glass used in the manufacturing process. Energy use also drops by about 2% to 3% for every 10% of recycled glass used in the manufacturing process<sup>457</sup>.

A study on Vermont's scheme estimated the cost savings experienced by container manufacturers because of the energy savings. In 2007, at electricity prices ranging from USD\$0.04/kwh to USD\$0.08/kwh, each tonne of collected containers recycled back into eligible containers provided savings of energy of USD\$45 to USD\$90. This equated to a saving of approximately USD\$0.02 for each container collected and used as manufacturing feedstock<sup>458</sup>.

Consequently, by using materials collected in a container return scheme for the production of new containers, it can be said that the scheme would contribute towards a 'can to can' or 'bottle to bottle' future and thereby enable onshore ōhanga āmiomio - circular economy outcomes. Implementation of a container return scheme can also enable better use of resources and create a continuous local stream of material feedstock.

An adverse environmental outcome, which has been driven by schemes, is the change in market share of refillable and single-use packaging<sup>459</sup>. Refillable packaging has a lower environmental impact than single-use packaging and since their market share has declined in many schemes, it is possible that the scheme design has not supported the refillable market however no in print information was available at the time of writing to confirm a direct relationship.

#### 9.2.1.4 Economic Benefits and Incentives

In addition to the cost savings from environmental benefits, economic benefits and incentives have been made available to container manufacturers.

As previously mentioned, to support with the required changes, producers in New South Wales were given a two-year transition period to allow them to get rid of their old stock and ensure that their new stock was compliant with the regulations<sup>460</sup>. This transition period would have supported container manufacturers as well who might have had to update their container designs to get rid of ring-pull lids.

In Sweden, it was reported that container manufacturers were quick to accept the scheme as they immediately saw the economic benefits out of the scheme. One of the major benefits is that it provided them with a continuous stream of materials that was used for new drink containers. This meant that cost and logistical savings were accounted for when purchasing feedstock<sup>461</sup>.

According to the study for a state scheme in Minnesota, the scheme would see an increase of 15-glass beneficiation jobs. Glass manufacturers would also receive increased revenue from the sale of higher value glass containers<sup>462</sup>. Other employment benefits for container manufacturers were mentioned in Section 9.1.1.3.2 where the expansion of the scope of containers was being considered for Massachusetts.

### 9.3 Scheme Awareness

While container manufacturers may be required to manufacture containers that are compliant with new regulations for their beverage clients, they do not have responsibility to raise awareness of the scheme.

<sup>457</sup> Minnesota Pollution Control Agency, 2014, Increasing recycling of beverage containers in Minnesota: Recommendations for a state-wide recycling refund program.

<sup>458</sup> DSM Environmental Services, Inc., 2007, The Costs of Beverage Container Redemption in Vermont.

<sup>459</sup> The Association of European Producers of steel for packaging (APEAL), 2008, New study reveals: Objectives of mandatory deposits in Germany not reached.

<sup>460</sup> NSW EPA, 2019, NSW Supplier Obligations.

<sup>461</sup> Zero Waste Scotland, year unknown, Deposit return in Sweden - A case study.

<sup>462</sup> Minnesota Pollution Control Agency, 2014, Increasing recycling of beverage containers in Minnesota: Recommendations for a state-wide recycling refund program.

Their role in the scheme is simply to supply the containers to the beverage suppliers, who will then add the beverage liquid, labelling requirements, deposit amounts and other scheme legislated additions to the containers. If there is a responsibility to spread awareness of the scheme, it would hence fall on the beverage suppliers.

The requirement to undertake any legislated updates to their containers would then be passed on to them either from the beverage suppliers for their containers or from the Managing Agency and/or scheme regulator. Most requirements for containers are either provided in the scheme regulations or on the scheme's official website.

In Queensland in Australia, the Managing Agency has an online page dedicated to manufacturers. The page includes training material and an online course that manufacturers can use to learn about their responsibilities and implications of the scheme on them. While most of it would be directed to beverage producers and discuss such items as labelling requirements, the page may also provide detail on the requirements for container manufacturers. The page also includes an email address that can be contacted for more information and a link to a portal that registered manufacturers can access<sup>463</sup>.

## 9.4 Roles and Responsibilities

One of the main purposes of schemes is to shift the cost and responsibility of managing container packaging onto producers and consumers<sup>464</sup>. The responsibilities of container manufacturers however differ based on how the scheme is designed. The sections below provide some examples of the ways that the roles and responsibilities are defined for container manufacturers in different countries.

Container manufacturers in New South Wales and the Australian Capital Territory are liable for funding the scheme if they are also the beverage producer and are identified as the party responsible for first supplying the eligible product to the market. This is similar in other countries, where scheme liability may not necessarily be immediately placed on beverage producers, but on those identified as the first party who pay the deposit or responsible for the supply of the product into the market.

The intention for using a 'first suppliers' liability strategy rather than direct beverage producer liability strategy in New South Wales was to decrease fraud and the potential for beverage retailers and beverage producers to move beverages across borders and avoid paying scheme costs. It has been reported that this method could be problematic as it can give the container manufacturer the responsibility for the eligible containers, however it is typically the beverage producer that controls the production and distribution of the beverages<sup>465</sup>. More information on first supplier responsibility in New South Wales and Australian Capital Territory is in Section 10. As previously stated, in Queensland and other Australian states, beverage producers are instantly responsible for paying for the scheme, not the container manufacturer<sup>466</sup>.

## 9.5 Communication with Managing Agency

In most cases, the beverage producer is the one who will need to be most in contact with the Managing Agency. In many schemes, eligible containers should be registered by the beverage producer and approved by the scheme Managing Agency or regulator before being sold in the market. As this occurs before supplying into the market, beverage producers develop contacts and a communicative relationship with the Managing Agency early in the process. Beverage producers can pass this information on to their container manufacturer.

<sup>463</sup> Containers for Change, date unknown, Beverage Manufacturers, available from:

<https://www.containersforchange.com.au/gld/beverage-manufacturers>

<sup>464</sup> DSM Environmental Services, Inc., 2007, The Costs of Beverage Container Redemption in Vermont.

<sup>465</sup> Marsden Jacob Associates, 2018, A Model Framework for Container Refund Scheme in Tasmania.

<sup>466</sup> Marsden Jacob Associates, 2018, A Model Framework for Container Refund Scheme in Tasmania.



If container manufacturers wish to contact the Managing Agency directly, most official websites of schemes, managing agencies, or of the relevant government departments will have online information that is relevant to container manufacturers or will provide the contact details that manufacturers can use for information on the scheme. Further information on this is provided in Section 10, which shows where Managing Agencies have an online contact number available for manufacturers.

## 9.6 The Aotearoa New Zealand Context

The container manufacturer in the context of the NZ CRS is defined as the manufacturer of eligible packaging and containers, however it is acknowledged that many container return schemes refer to container manufacturers and beverage producers differently, often identifying them as manufacturers, suppliers, brand owners or bottlers. Sometimes, depending on the company, beverage producers and container manufacturers are one and the same.

In the NZ CRS context and recognising the feedback received from the Scheme Design Working Group (SDWG), a clear transition period is required to assist container manufacturers establish and implement the appropriate processes and procedures to ensure containers are compliant with any specific NZ CRS requirements. The specific scheme requirements are expected to be managed by the purchaser of the containers, in this case the beverage producer through contractual arrangements between both parties. However, the NZ CRS Managing Agency (see Section 14 for further discussion) may also have specific contractual requirements in place with the beverage producer which may involve auditing of the container manufacturer to ensure, for example, compliance with scheme requirements (e.g., incorporating post-consumer recycled materials in the manufacture of scheme containers).

Additionally, feedback received from the SDWG noted that refillables should be excluded from the NZ CRS and established as a stand-alone scheme. However, the SDWG acknowledged that there may be opportunities for the two (2) schemes to work alongside one another through measures, including for example, the NZ CRS financially supporting the establishment of refillable infrastructure (e.g., washing facilities) and utilising aspects of the NZ CRS container return facility infrastructure for the collection of refillables.

## 9.7 Summary of Key Findings

The outcomes of the above research show that container manufacturers are responsible primarily for supplying eligible empty packaging to beverage producers and for supporting the closed loop of the scheme by incorporating post-consumer recycled materials in their manufacturing, where possible. This is usually the contract responsibility of beverage producers who would pass on that requirement to their container manufacturers. The role of container manufacturers can sometimes be also fulfilled by the beverage producers. Each scheme refers to container manufacturers and beverage producers differently, often identifying them as manufacturers, suppliers, brand owners or bottlers. Container manufacturers have a vital role in the effective establishment and ongoing success of a container return scheme.

The following conclusions are also drawn from the research:

- Container manufacturers are not responsible for scheme liability. This is usually the responsibility of beverage producers; A beneficial outcome of schemes is that they generate a local stream of clean recycled materials for container manufacturers to use in their new containers, enabling onshore *ōhanga āmiomio* - circular economy outcomes (Section 9.1);
- Less energy is required to turn collected containers into materials that can be used in the manufacturing of new containers. This leads to a decrease in manufacturing emissions into Papatūānuku such as air and water emissions (Section 9.1);

- Container manufacturers are impacted by the manufacturing changes that their beverage producers might request in order to be compliant with the scheme, such as removal of ring-pull lids (Section 9.2);
- A transition period may assist container manufacturers to make the necessary change to containers in order to comply with specific regulations (Section 9.2);
- Some container return schemes influence the container manufacturer to use recycled scheme material in the production of new containers thereby contributing towards a 'can to can' or 'bottle to bottle' future (Section 9.2);
- Container return schemes have been reported to contribute to a change in the market share of refillable packaging (Section 9.2);
- Purchasing feedstock cost and logistical savings were reported in Sweden as container manufacturers were provided with a continuous stream of materials to produce new containers (Section 9.2);
- While container manufacturers may be required to manufacture containers that are compliant with new regulations for their beverage clients, they do not have responsibility to raise awareness of the scheme (Section 9.3);
- Container manufacturers are commonly liable for funding a container return scheme if manufacturers are also the beverage producer and are identified as the party responsible for first supplying the eligible scheme container to the market (Section 9.4); and
- In many schemes, eligible scheme containers are registered by the beverage producer and approved by the scheme Managing Agency or regulator before being sold in the market. As such, the beverage producer commonly communicates relevant scheme requirements to the container manufacturer (Section 9.5).

Consequently, the role of the container manufacturer in a container return scheme is small compared to the beverage producer who holds most of the responsibility for ensuring eligible containers are compliant and the role of the container manufacturer may include the requirement of the scheme to use eligible material in the production of new containers. Therefore, the design of the scheme will determine the degree to which the container manufacturer is directly impacted by the scheme.

## 9.8 Summary of Design Feedback Received

The following table provides a high-level summary of the feedback received from the Scheme Design Working Group (SDWG) members after reviewing the section information. As many suggestions as possible have been incorporated but the NZ CRS Project Team acknowledge that the wide range of views expressed meant not every edit could be accepted. The NZ CRS Project Team is grateful for those who have provided feedback and where possible these have been used to provide further clarity and context throughout this section and to identify areas requiring further assessment during the NZ CRS implementation stage (Section 17).

<b>The Container Manufacturer Feedback – High-Level Summary</b>	
<b>Areas for further Investigation</b>	
How the use of post-consumer recycled materials would be implemented and controlled (see Section 12, Section 14 and Section 17 for further discussion).	The affordability of local recycled materials as opposed to overseas markets (see Section 12, Section 14 and Section 17 for further discussion).

<b>The Container Manufacturer Feedback – High-Level Summary</b>	
For refillables, greater detail on handling fees, logistics such as storage spaces and wash facilities, market and commercial viability, impact on existing market, and policy levers (see Section 17 for further discussion).	The number of times different types of materials can be recycled and reused, and the process for dealing with the material after they are no longer usable (see Section 17 for further discussion).
A life cycle analysis (LCA) of the full suite of environmental and human health harms and employment opportunities along the life cycle of all materials including refillables (see Section 17 for further discussion).	Management of food safety impacts and food safety acts for the use of recycled content in containers (see Section 17 for further discussion).
<b>Opposing Views</b>	<b>Support the Following</b>
<p>Mandating the use of post-consumer recycled content:</p> <ul style="list-style-type: none"> <li>Members in support state this will help drive the circular economy and that regulation is required to drive this.</li> <li>Members against state that recycled material can be more expensive than virgin material, and not usable in some beverages such as high fat dairy.</li> </ul>	The beverage producer to be responsible for scheme compliance and scheme financial liability.

## 9.9 Component(s) to be Included in the New Zealand Container Return Scheme Design

Taking the above key findings into account including feedback from stakeholders involved in the NZ CRS design, the Project Team are of the view that the following components will be included in the NZ CRS design:

- The Managing Agency will give effect to the following:
  - Implementation of a transition period to help ensure that container manufacturers are given enough time to make the necessary changes to their containers to comply with regulations.
    - The benefit of a transition period to New Zealand container manufacturers is to ensure manufacturers are provided sufficient time to adjust to scheme requirements, as requested by the beverage producers, and establish new processes where needed.
  - Require as part of contractual obligations and/or key contractual performance indicators with beverage producers, that:
    - Contractual negotiations support the provision of post-consumer recycled scheme material to local container manufacturers.
      - The reason why this is good for Aotearoa New Zealand is that the Managing Agency will encourage and promote Extended Producer Responsibility by requiring where appropriate (e.g., safe to consumers) container manufacturers to use recycled scheme material in the production of new containers.
    - Container manufacturers use and maximise the proportion of post-consumer recycled scheme material in the manufacturing of new containers as required by

the beverage producers. The minimum proportion target of post-consumer recycled material to be based on best international practice.

- The benefit to Aotearoa New Zealand is further investment and diversification in existing New Zealand re-processing capacity and encouragement in innovative solutions that support onshore employment opportunities.
  - Use of post-consumer recycled scheme material in container manufacture will be exempted if containers can be reused or refilled. The Managing Agency, working with the regulatory authority and industry to determine the number of times reuse and/or refill can occur to enact this exemption.
    - The reason why this is good for Aotearoa New Zealand is to encourage and facilitate further development and expansion of the refillable market.
- Provision of information to clearly set out any specific labelling requirements to help ensure container manufacturers are compliant.
  - The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
- Provision of information to container manufacturers including an online portal to access training material, courses and specific scheme information.
  - The provision of information resources to container manufacturers is beneficial to a NZ CRS as it will provide the platform to ensure the provision of consistent messaging and the ability to address concerns quickly and efficiently.
- Recommend regulations that stipulate technical specifications for containers manufactured or imported into Aotearoa New Zealand that give effect to maximising *ōhanga āmiomio* - circular economy outcomes and principles of *kaitiakitanga whakanaonga* - product stewardship are realised.
  - Taking on board the experiences and learnings from other countries, the benefit of this approach is to ensure container production and its impacts on the economy and environment is sustainable and reflects best practice.

Further, acknowledging SDWG feedback refillables will be excluded from the NZ CRS, however the NZ CRS design will support the promotion of the uptake of refillables and where possible encourage new opportunities for refilling which may include, but not be limited to:

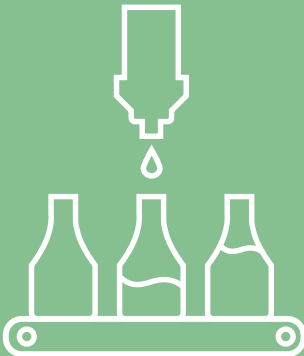
1. Investment in, or funding of, infrastructure by addressing barriers such as the return, re-washing and refilling of bottles.
2. Working together with beverage companies to enable the method of return by customers is convenient and accessible.
3. Working together with beverage companies to promote refillables including awareness and education.
4. Working with beverage companies to promote both a universal and bespoke refillable bottle. Universal bottle here refers to a generic bottle that could be used by multiple beverage companies but each with their own unique label.

This is in alignment with the three (3) key project outcomes as discussed in Section 1 and noted below:

1. Change the way Aotearoa New Zealand values beverage containers that will see increased recycling and new opportunities for refilling;
2. Reduce the volume of plastics and other container litter currently ending up in our *awa* - waterways, *moana* - marine environment, *wāhi tūmatanui* - public spaces and *ruapara* - landfills; and
3. Give effect to *ōhanga āmiomio* - circular economy outcomes and any future priority product guidelines.

# SECTION 10: THE BEVERAGE PRODUCER

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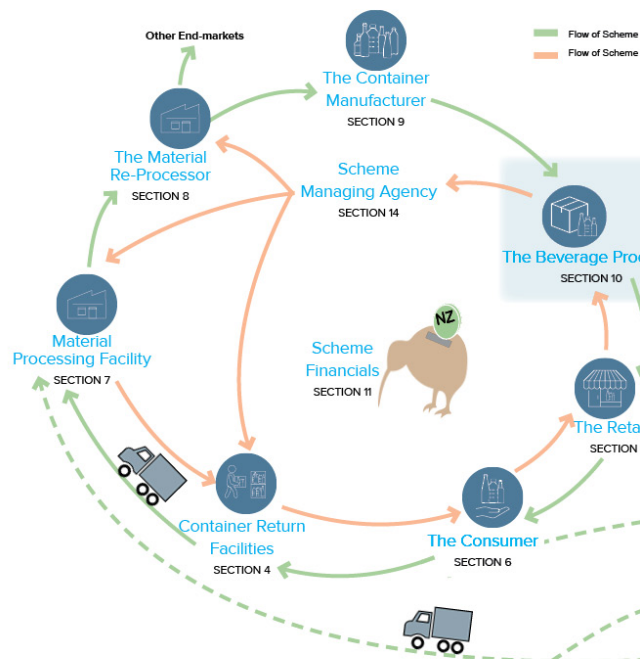




## Section 10 The Beverage Producer

As seen in previous sections, the following schematic illustrates the broad mechanism of a NZ CRS design, which includes the roles and relationships of the respective scheme participants, including the container manufacturer, and the broad movement of the scheme financials (e.g., the deposit, handling fee, administration fees and the Advanced Material Recycling Fee). As with many container return schemes, scheme participants (e.g., MCF, Consumer, Retailer) cannot be considered in isolation of one another, as scheme success is underpinned by integrated and inter-connected relationships coordinated and fostered by a Managing Agency. In Aotearoa New Zealand, the Managing Agency will therefore be tasked with catalysing taupuhipuhi – interdependence and whanaungatanga – relationships across the scheme stakeholders.

Focussing on the below schematic, beverage producers are defined as the manufacturers of the drinks that go into the containers manufactured by the container manufacturers. For consumers, it is often beverage producers that can be identified because of their brand marketing on the containers rather than the container manufacturers.



There are many similarities in the roles of the beverage producer and the container manufacturer, however the majority of the responsibility of scheme involvement often falls on beverage producers (e.g., responsible for paying the scheme deposit and scheme fee). Depending on the company, beverage producers and container manufacturers can be one and the same. Hence there are some similarities in content between Section 9 and Section 10. Where this occurs, it is acknowledged in the sections below.

*Most schemes are implemented with the intention to create producer responsibility.*

*Costs of running schemes are often the liability of beverage producers with consumers ultimately paying for the cost of the scheme*

Considering that most schemes are implemented with the intention to create producer responsibility, costs of running schemes are often the liability of beverage producers with consumers ultimately paying for the cost of the scheme. Terms such as “first suppliers”, “suppliers” or “deposit initiators” have been used in scheme regulations to identify the party that is responsible for funding the scheme. This can be

confusing to many stakeholders and their level of involvement can be unclear. The sections below define who is defined as that party, and when beverage producers fall under that category.

In most existing schemes, beverage producers are responsible for:

- Ensuring that eligible beverage containers are supplied to the market;
- Ensuring that the eligible containers are clearly marked and identified as part of the scheme; and
- Paying for the costs related to the supply of eligible container materials as part of the scheme.

As will be further discussed in Section 14, beverage producers can also be involved as Scheme Coordinators.

The below sections discuss the experiences of beverage producers in different existing schemes. Those experiences have been summarised below:

- Impacts on beverage container manufacturing, including:
  - Container labelling;
  - Container material incentives;
  - Container materials preferences; and
  - Closed loop manufacturing.
- Impacts on beverage producers, including:
  - Costs on beverage producers;
  - Commercial tensions;
  - Market placement;
  - Required logistical modifications;
  - Exporting exemptions; and
  - Economic benefits and funding.

## 10.1 Beverage Producer Experience

### 10.1.1 Impact on Beverage Manufacturing

#### 10.1.1.1 Container Labelling

Most existing schemes require that eligible containers are labelled as decided by legislation. Beverage producers are commonly required to update their existing container designs to include a scheme logo, a barcode and the deposit or refund amount.

Scheme logos are important as they support consumers in identifying containers that are included in the scheme. A uniform label is easy for consumers to understand and identify. For beverage producers, this can mean that a mandated label decreases the space available for the design, brand and marketing of the beverage to be located on the rest of the container<sup>467</sup>. If producers are servicing multiple schemes, they may be required to ensure that they always have spare stock so that enough stock is available for each label<sup>468</sup>.

The implications of not mandating container labelling can be seen in the Michigan scheme. Prior to 2008, beverage producers were not required to change their existing designs to identify eligible containers. However, this led to ineligible containers being returned by consumers and receiving a refund on them. Hence, from 2008 onwards, beverage producers were required to label eligible

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<sup>467</sup> Eunomia Research & Consulting, 2011, Options and Feasibility of a European Refund System for Metal Beverage Cans

<sup>468</sup> Eunomia Research & Consulting, 2011, Options and Feasibility of a European Refund System for Metal Beverage Cans



containers to help decrease the level of fraud that was being undertaken. The amended act enforced that beverage producers are to label eligible containers with a machine-readable, state specific logo<sup>469</sup>. Similarly, in 2011, container labelling was not required as part of the scheme in Croatia, which led to some fraud activity by consumers<sup>470</sup>.

In some schemes, beverage producers are required to pay the Scheme Coordinators or seek approval for the use of each label. In Germany, labelling requirements are managed by the Managing Agency and the deposit label itself is owned by the Managing Agency. Hence, beverage producers are required to pay a registration fee for each label and barcode that is registered in the system<sup>471</sup>. In addition to the label, a security mark is required to be placed on the cans using a special printing ink to ensure that barcodes cannot be photocopied for fraud purposes. This means that beverage producers are required to have separate printing stations and apply separate measures for the use and storage of the speciality ink. It was estimated in 2011 that the cost for producers to add the specialty mark to containers was EURO.5cents per can. This includes the cost of setup and management of the specialist ink. Without considering setup and management, the cost was estimated to be EURO.05 - 0.1cents per can<sup>472</sup>.

In Sweden, The European Article Number (EAN) code for each product must be registered with the Scheme Coordinators, before it can be used. This allows the Scheme Coordinators to administer individual packaging. If beverage producers want to change the packaging design or the container label, they must forward their request and get it approved by the Scheme Coordinator<sup>473</sup>.

Nordic countries are said to be the most expensive for beverage producers in terms of adding scheme labelling to containers, since they have multiple schemes with different labelling requirements and several beverage producers supply to multiple schemes<sup>474</sup>.

### 10.1.1.2 Container Material Preferences

Many existing schemes are only applied to particular container material types. This has led to concerns that beverage producers can be pushed to change the container material types for their beverages to avoid paying for the scheme. This would also lead to negative environmental consequences by driving an increase in a material that is not recycled as part of the scheme.

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*Most schemes require eligible containers to be labelled as decided by legislation. Beverage producers are commonly required to update their existing container designs to include a scheme logo, a barcode and the deposit or refund amount*

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As part of the Danish scheme, water was initially excluded as it was sold in multiple container material types including cartons and plastics and the scheme did not apply to all material types. It was thought that if water was included, it would lead to competition in packaging and losses to different packaging companies. However, a later review was undertaken by the Government, which decided that the environmental benefits of including water outweighed the impacts of packaging competitions. Some beverages were found to be swapped for non-refundable packaging; however, it was said that this change was not necessarily only driven by the scheme but by consumer choice of packaging as well<sup>475</sup>.

There was evidence found in Sweden to suggest that some beverage producers were changing their product material from PET to other plastics to avoid paying scheme costs. A juice producer was found to

<sup>469</sup> The University of Vermont, 2012, Vermont Legislative Research Service.

<sup>470</sup> BottleBill.org, 2011, Croatia, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/worldwide/croatia>

<sup>471</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>472</sup> Eunomia Research & Consulting, 2011, Options and Feasibility of a European Refund System for Metal Beverage Cans

<sup>473</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>474</sup> Eunomia Research & Consulting, 2011, Options and Feasibility of a European Refund System for Metal Beverage Cans

<sup>475</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

have changed their container product material to a different plastic to replace PET. Legislation was updated in 2005 to include all types of plastic to avoid such occurrences<sup>476</sup>.

When a state scheme was being proposed for Minnesota in the United States of America, the association called the American Forest & Paper Association responded that paper-based packaging that includes shelf-stable and refrigerated cartons should not be included as part of the scheme.

Their reasons for the exclusion of the material included:

- Paper-based packaging when collected in kerbside helps avoid consumer confusion.
- Kerbside collection systems have shown evidence of achieving high recycling rates at lower costs for paper products.
- Kerbside collection would have a lower tapuwae waro - carbon footprint because all materials are collected weekly by trucks rather than consumers making multiple trips in cars to collection points.

The Carton Council, an organisation that promotes and works towards carton recycling supported the argument of the American Forest & Paper Association and stated that paper-based materials are one of the most sustainable packaging solutions as they mainly consist of renewable materials. They are also transport efficient, require transport in fewer trucks and decrease impact on climate change.

Carton Council stated that cartons allowed for the safe delivery of market products such as milk, juices and basic food commodities to consumers and should remain accessible and affordable to society<sup>477</sup>.

One of the main materials used by beverage producers for the manufacture of cans is aluminium. It was reported that the use of aluminium was in part due to the higher value of the material, with the value once sold, used to offset a portion of the scheme costs<sup>478</sup>. In Ontario, the government pays manufacturers to use aluminium for their cans because of the high market value and recyclability of the material<sup>479</sup>.

In addition to material types, some schemes place restrictions on material compositions and performance. In Estonia, packaging materials must be kept to a minimal amount and have minimal impact on the environment, including the amount of heavy metals that can be found in the material<sup>480</sup>. In Croatia, beverage producers are required to supply beverage in reusable or recyclable packaging, in accordance with available technologies. Producers are also required to ensure that the levels of heavy metals used are below a certain level. Producers who generate more than a specified amount of heavy metals are charged for the expenses of collection, disposal and recovery<sup>481</sup>.

The general pattern globally is that reusable packaging is preferred by domestic producers while single use packaging is preferred by international producers. A scheme that places a preference for reusable packaging could give preference and be an advantage to domestic producers<sup>482</sup>.

<sup>476</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>477</sup> Minnesota Pollution Control Agency, 2014, Increasing recycling of beverage containers in Minnesota: Recommendations for a state-wide recycling refund program.

<sup>478</sup> Eunomia Research & Consulting, 2011, Options and Feasibility of a European Refund System for Metal Beverage Cans

<sup>479</sup> Sound Resource Management Group, City of Tacoma and Green Solutions, 2005, Economic & Environmental Benefits of a Deposit System for Beverage Containers in the State of Washington.

<sup>480</sup> BottleBill.org, 2001, Estonia, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/worldwide/estonia>

<sup>481</sup> BottleBill.org, 2011, Croatia, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/worldwide/croatia>

<sup>482</sup> Directorate General for External Policies of the Union - Policy Department, 2011, A European Refunding Scheme For Drinks Containers.

### 10.1.1.3 Container Material Incentives

There are indications however that scheme regulators have realised that, in order to keep supplying beverages in sustainable packaging, beverage producers sometimes require regulatory incentives. This product change was immediately identified in the German scheme where there was a considerable decrease in beverages sold in recyclable materials as beverage manufacturers started supplying more beverages in single-use non-recyclable packaging to keep retail prices low<sup>483</sup>.

To ensure that brewers did not suddenly switch packaging from refillables and sell beer in single-use bottles in Quebec, a quota was imposed on the manufacturing of beer. The quota required brewers to produce less than 37.5% of containers in single-use containers per year. This was also implemented to decrease negative impacts on refillable containers from the scheme, and to decrease any fraud that beverage producers may commit by counting collected single-use containers as part of the refillable glass percentage<sup>484</sup>. Similarly, in British Columbia, brewers are required to supply all ready-to-drink beverages in recyclable or refillable containers<sup>485</sup>. In 1997, beverage producers in the Netherlands were prevented by law from changing their refillable beverage containers to single-use containers unless the producers could prove that the single-use containers had no additional negative impact on the environment (this may have included demonstration of recovery pathways)<sup>486</sup>.

To incentivise beverage producers to think about the end-of-life value of the materials used for their beverages, a processing fee is placed on Californian beverage manufacturers. The processing fee is placed on beverage containers that cost more to recycle than they are worth when they are sold as scrap recycled materials<sup>487</sup>.

In Denmark, an opposite course to the above was taken by scheme regulators. Prior to 2002, producers were required to sell beer and carbonated soft drinks in refillable bottles only. Perhaps to ensure beverage producers' participation in the scheme, this requirement was removed in 2002 at the same time as the scheme was introduced for single-use packaging<sup>488</sup>.

### 10.1.1.4 Closed Loop Manufacturing

Reusing materials collected from a scheme can offset some of the initial costs with participating in the scheme. Schemes generally add expenses to beverage producers, however the income generated by the downstream sale of the material can be put back into the scheme and offset these costs<sup>489</sup>.

*Scheme regulators have realised that, in order to keep supplying beverages in sustainable packaging, beverage producers sometimes require regulatory incentives*

*Since the introduction of schemes, many large beverage producers have made public commitments to increase the recycled content in their containers and move towards a closed loop manufacturing process*

*To incentivise beverage producers to consider the end-of-life value of the materials used for their containers, a processing fee may be placed on beverage manufacturers.*

*The processing fee is placed on beverage containers that cost more to recycle than they are worth when they are sold as scrap recycled materials*

<sup>483</sup> Institute of Economic Affairs, year unknown, A Load of Rubbish? Introducing a Deposit Return Scheme to the UK.

<sup>484</sup> BottleBill.org, year unknown, Québec, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/canada/quebec>

<sup>485</sup> BottleBill.org, 2017, British Columbia, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/canada/british-columbia>

<sup>486</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK

<sup>487</sup> CalRecycle, 2020, Frequently Asked Questions (FAQ), <https://www.calrecycle.ca.gov/bevcontainer/programinfo/faq>

<sup>488</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK

<sup>489</sup> Enomia Research & Consulting, 2011, Options and Feasibility of a European Refund System for Metal Beverage Cans

Since the introduction of schemes, many large beverage producers have made public commitments to increase the recycled content in their containers and move towards a closed loop manufacturing process. Large beverage producers with such commitments include Coca-Cola, PepsiCo, and Nestlé Waters. PepsiCo have said that a major limitation to achieving their commitment is the lack of recycled content in the supply chain<sup>490</sup>. While this is not explicitly in support of container return schemes, schemes have benefitted container and beverage manufacturers with an increased supply of local clean stream recycled content as discussed in Section 9.

Several large beverage manufacturers have identified schemes as major contributors to their recycled content feedstock. Eckes-Granini, the market leader of fruit beverages in Lithuania, are in support of national schemes and have stated that schemes, along with kerbside recycling systems, have the ability to generate valuable recycled PET that can contribute to an increase in the recycled content used in their containers supplied to the market<sup>491</sup>. Another large beverage producer in Norway, Hansa Borg Bryggerier As, have stated in their 2014 annual report that the national scheme has been used as a tool to collect used plastic bottles for the manufacturing of their bottles<sup>492</sup>. Similarly, Ice River Springs, a water bottle producer in Ontario, proudly advertise that they are the first company in North America to generate 100% recycled content plastic bottles, due to the blue box program in Ontario and the stable supply of local material provided by the container return scheme<sup>493</sup>.

In their plan for a national scheme, the Scottish Government have stated that one of the reasons for implementing the deposit return scheme is to provide a new and secure resource of high-quality material for beverage manufacturers. The Government acknowledged that producers have demanded an increase in the amount of local recycled content that is available to them, and the scheme will help provide them with valuable feedstock. Additionally, the Scottish Government recognised that they can use the scheme as a powerful tool to influence product design. The strict requirements behind what will be considered as eligible material will drive producers to manufacture containers that meet the specific criteria. The Scottish Government have stated that they intend to use the scheme to drive standardised material and design for recyclability in the design process of producers. This will support the Scottish Government in achieving their strategic circular economy goals<sup>494</sup>.

## 10.2 Impact on Beverage Producers

### 10.2.1.1 Costs on Beverage Producers

Considering that most schemes are implemented with the intention to create producer responsibility, costs of running schemes often fall on beverage producers. Scheme liability however does not always automatically fall on those that are beverage producers, but more so on the party that is identified as the first to supply a beverage into a market. In most situations, this will be the beverage producer, however it can also be container manufacturers, retailer, wholesalers, and others. Depending on the scheme's design, beverage producers can be responsible for paying fees such as an initial set-up fee, an annual fee, and the deposit fee for each container put on the market<sup>495</sup>.

The following sections discuss how scheme liability is identified in different schemes and what the different fee requirements are if the responsibility is on beverage producers.

<sup>490</sup> Packaging World, 2020, Static Bottle Recycling Rate is Insufficient to Meet CPG Demands for rPET, available from: <https://www.packworld.com/issues/sustainability/article/21110134/static-bottle-recycling-rate-is-insufficient-to-meet-cpg-demands-for-rpet>

<sup>491</sup> Eckes-Granini Deutschland GmbH, year unknown, Sustainability and Environmental Statement 2017-2020

<sup>492</sup> Hansa Borg Bryggerier As, 2014, Arsrapport 2014

<sup>493</sup> Ice River Springs, 2019, Closed-Loop Recycling, available from: <https://iceriversprings.com/closed-loop.php>

<sup>494</sup> The Scotland Government, 2018, A Deposit Return Scheme for Scotland

<sup>495</sup> Directorate General for External Policies of the Union - Policy Department, 2011, A European Refunding Scheme For Drinks Containers.

### 10.2.1.1.1 Australia

Most Australian states place the costs of schemes on beverage suppliers. However, in New South Wales and the Australian Capital Territory, the costs of the scheme fall on those identified as “first suppliers”. A first supplier is identified as the party that is the first to supply the eligible beverage to the market. This can often be the beverage producer. The definition of “first suppliers” is discussed in more detailed in Section 10.4.1 where the roles and responsibilities of beverage producers are defined.

In New South Wales, beverage suppliers identified as first suppliers are required to pay contributions based on a fixed price per material type to fund the management, administration and operation of the scheme<sup>496</sup>. Funds collected from suppliers can only be used by the Managing Agency for container refunds and the costs of operating the scheme<sup>497</sup>. Additionally, first suppliers in New South Wales are obligated to make payments towards the scheme, provide data as needed and provide access for auditing.

When the scheme first started, it required an upfront payment by first suppliers to ensure that scheme costs were covered in the first period. The payments were adjusted in the next month's payments based on the redemption rates of the previous month. Payments in advance have been used by multiple schemes to ensure enough liquidity to support the operation of the scheme. It has been said that this caused cash flow problems to smaller producers at the start of the scheme in New South Wales and led to the state government needing to provide loans to impacted manufacturers<sup>498</sup>. This payment system has since been changed to a payment in arrears system, where first suppliers provide their sales data at the end of every month and must pay within the next month. In the first month of the operation of the scheme, the Managing Agency invoiced AUD\$52 million to first suppliers. In their first newsletter, they stated that this has provided them with adequate liquidity to support the funding of the collection network<sup>499</sup>.

First suppliers can pass the scheme costs on to retailers. Retailers may then similarly pass the costs on to their consumers. The New South Wales scheme is said to be designed using the existing market forces to control prices and ensure that there is no profiteering from the scheme.

In the first year of the scheme's operation, the Independent Pricing and Regulatory Tribunal (IPART) undertook a study to assess the impact of the scheme on different parties such as beverage producers. IPART reported that in the first year of operation, the prices of eligible container beverages increased by an average of AUD7.7cents per container. The direct cost of the scheme was on average AUD9.3cents per container. This was said to be consistent with or even less than the direct cost of the scheme. Hence it was indicated that beverage suppliers were absorbing some of the costs of the scheme rather than passing them on to consumers<sup>500</sup>.

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*The Scottish Government has acknowledged that producers have demanded an increase in the amount of local recycled content that is available to them - the scheme will help to provide this valuable feedstock*

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In the Australian Capital Territory, the pricing arrangement is similar to that in New South Wales but the term “first supplier” is not used. The supplier pays what is identified as a “supply contribution” to fund the AUD10-cent refund per container. The contribution goes towards funding the operation, systems management and administration. There are no costs associated with acquiring container approvals and entering into supply arrangements with the Managing Agency, which suppliers in the Australian Capital Territory are required to do. However, there are legal documents included in those arrangement, which

<sup>496</sup> <https://www.exchangeforchange.com.au/schemes/how-the-nsw-return-and-earn-scheme-works.html>

<sup>497</sup> NSW Department of Planning, Industry & Environment, 2019, NSW Container Deposit Scheme - Frequently asked questions.

<sup>498</sup> Marsden Jacob Associates, 2018, A Model Framework for Container Refund Scheme in Tasmania.

<sup>499</sup> Exchange for Change, 2017, Newsletter November 2017.

<sup>500</sup> NSW Department of Planning, Industry & Environment, 2019, NSW Container Deposit Scheme - Frequently asked questions.

beverage suppliers may want to seek legal advice for. Legal advice is said to be at the beverage supplier's cost<sup>501</sup>.

As previously stated, the other Australian states place the responsibility of funding the scheme on beverage producers. In Queensland, beverage producers pay for each eligible container supplied to the state market<sup>502</sup>. Producers are charged in arrears on their actual sales so that they do not pay for unsold containers<sup>503</sup>. When the scheme first started, the contributions required from beverage producers for different materials were:

- Aluminium: AUD11.2cents per container
- Glass: AUD11.9cents per container
- HDPE: AUD11.9cents per container
- PET: AUD11.8cents per container
- LPB: AUD12.1cents per container
- The expected weighted average by number of containers sold: AUD11.6cents per container<sup>504</sup>

The contributions were frozen in the first year of the scheme's operation to ensure costs were kept down for beverage producers<sup>505</sup>. In addition, information gathered from conversations with the Queensland scheme operator, noted that the initial registration fees were waived at the start of the scheme to some Australian jurisdictions such as Queensland and Western Australia.

In South Australia, beverage producers pay a one-off fee for applying to the Environment Protection Authority (EPA) to assess and process a waste management arrangement application<sup>506</sup>, which beverage suppliers are required to have in order to supply eligible containers. Beverage suppliers must also pay super collectors the deposits and handling fees, which contribute to establishing the collection system. The beverage supplier incorporates the costs in the price of the product which they sell to retailers<sup>507</sup>.

#### 10.2.1.1.2 United States of America

In the United States of America, and in fact other places around the world, beverage producers must bear the cost of changing their labelling and packaging designs multiple times to meet the requirements of multiple schemes that they deliver to. This is especially evident if schemes are not consistent across borders. This sometimes could be justified if the environmental and eventually the economic benefits outweigh the costs<sup>508</sup>.

In most schemes in the United States of America, the costs of the scheme are placed on the party identified as the "deposit initiator". Deposit initiators are those responsible for first paying the deposit of the container supplied to the market. The definition of deposit initiators is further discussed in Section 10.4.2, however in general, the deposit initiator role falls on the beverage producer.

In Connecticut, the point of entry of cash for deposit initiators is regulated by the state government. An amendment to the Connecticut Bottle Bill Act in 2009 required all deposit initiators to open a separate bank account, identified as a "special account", at a Connecticut branch of a financial

<sup>501</sup> Exchange for Change, date unknown, ACT Container Deposit Scheme -Guidelines for beverage suppliers.

<sup>502</sup> Container Exchange, date unknown, Beverage manufacturers, available from:

<https://www.containerexchange.com.au/industry-partners/>

<sup>503</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>504</sup> Container Exchange, date unknown, Beverage manufacturers, available from:

<https://www.containerexchange.com.au/industry-partners/>

<sup>505</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>506</sup> South Australia EPA, date unknown, Environmental Info, available from:

[https://www.epa.sa.gov.au/environmental\\_info/container\\_deposit/faqs](https://www.epa.sa.gov.au/environmental_info/container_deposit/faqs)

<sup>507</sup> SA EPA, 2015, Container deposit legislation -a South Australian environmental success story

<sup>508</sup> Directorate General for External Policies of the Union - Policy Department, 2011, A European Refunding Scheme For Drinks Containers.

institution. The account's only purpose is to be used to deposit the refund value for each beverage container. By a required date, all full deposit and refund values need to be deposited in the separate bank account. Any unredeemed deposits remaining in the supplier's special bank account are to be forwarded to the state to be added to the State's General Fund. Additionally, any interest, dividends and returns earned by the account are to be given to the State General Fund. If payment is not made by a particular date, the state can fine the deposit initiator 10% of the amount due or USD\$50, whichever amount is greater. The amount due accrues interest at 1% per month from the due date. Penalties or interest cannot be paid with funds in the special account<sup>509</sup>. If producers wish to use a different accounting system, they must petition to the Managing Agency and provide proof of the system being proper and equitable.

As part of the Connecticut scheme, the retailer pays the deposit to the beverage supplier and the beverage supplier reimburses the retailer or redemption centre for each collected beverage plus a handling fee. The handling fee is USD0.015cents per beer container and USD0.02cents per carbonated soft drink and noncarbonated beverage container<sup>510</sup>. Similarly, in New York, deposit initiators pay retailers and redemption centres for the deposits with the addition of a handling fee of USD3.5cents for each collected container<sup>511</sup>.

In Vermont, manufacturers are required to reimburse retailers and redemption centres a handling fee of USD3.5cents per container for containers that are a part of a co-mingling program, and USD4.0cents per container for those that are not in a co-mingling program. Unredeemed deposits were previously kept by the beverage producers, however as of October 2019, beverage manufacturers have been required to hand the unredeemed deposits to the Vermont Department of Taxes<sup>512</sup>.

In California, beverage producers pay a California Refund Value (CRV) to the state. The CRV is paid into the state fund. Beverage producers pass these costs on in their beverage prices to retailers, which then pass the costs on to consumers<sup>513</sup>. Beverage producers also pay processing fees to the state. The processing fee was previously mentioned in Section 10.1.1.2 and is paid when the cost of recycling is greater than the value of the scrap materials. Part of the processing fee and the unredeemed deposits are used to subsidise costs of redemption centres, recyclers and kerbside collection programs<sup>514</sup>.

Because of the Michigan scheme, beverage producers have experienced an increase of 20% to 30% in transportation and fleet costs, due to the transportation requirements associated with delivery of beverages to retailers and the collection of redeemed containers. By owning the value of the collected beverage containers however and by selling the scrap materials, beverage producers have been able to offset their costs<sup>515</sup>.

<sup>509</sup> State of Connecticut Department of Energy & Environmental Protection, year unknown, Bottle Bill FAQ, available from: [https://www.ct.gov/deep/cwp/view.asp?a=2714&q=324834&depNav\\_GID=1645](https://www.ct.gov/deep/cwp/view.asp?a=2714&q=324834&depNav_GID=1645)

<sup>510</sup> State of Connecticut Department of Energy & Environmental Protection, year unknown, Bottle Bill FAQ, available from: [https://www.ct.gov/deep/cwp/view.asp?a=2714&q=324834&depNav\\_GID=1645](https://www.ct.gov/deep/cwp/view.asp?a=2714&q=324834&depNav_GID=1645)

<sup>511</sup> BottleBill.org, 2018, New York, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/usa/new-york>

<sup>512</sup> Vermont Agency of Natural Resources - Waste Management & Prevention Division Solid Waste Program, 2019, Bottle Bill Fact Sheet: Manufacturers

<sup>513</sup> BottleBill.org, 2018, California, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/usa/california>

<sup>514</sup> BottleBill.org, 2018, California, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/usa/california>

<sup>515</sup> Public Sector Consultants, 2013, Improving Recycling Performance in Michigan

### 10.2.1.1.3 Canada

In Canada, some provinces have multiple schemes for different types of beverages.

As part of the system for beer, retailers in Quebec pay the deposit for the bottles when delivered by the brewers and are reimbursed for each bottle collected by the brewers. There is no handling fee for beer in Quebec<sup>516</sup>. In Prince Edward Island, retailers similarly pay beverage producers the deposit for non-alcoholic bottles delivered. When collected, manufacturers refund the deposit for the collected containers<sup>517</sup>.

In Ontario, industry-standard refillable beer bottles have the lowest handling fee, while non-standard and single-use bottles have a higher handling fee. The fee is paid by brewers to the Beer Store who manage the beer refund scheme<sup>518</sup>.

### 10.2.1.1.4 Europe

In Germany, an annual fee paid by each producer participating in the scheme. In addition to the annual fee, a registration fee is to be paid for each barcode registered. The fees assist with the operation of the Managing Agency, which is a not-for-profit organisation. Similarly, in Sweden, producers must pay in advance a deposit fee, an administration fee and sorting fees. Producers pay an annual registration fee of SEK10,000 to the Swedish Board of Agriculture, who oversees the scheme. The fees are collected by the Scheme Coordinator and are used to finance the auditing of the scheme.<sup>519</sup> Similarly in Lithuania, administration fees are paid by beverage producers to the Managing Agency<sup>520</sup>.

In Denmark, beverage producers must pay a deposit fee to the Scheme Coordinator. The deposit fee is based on the volume of sales made in the previous year and the predicted sales for the coming year. Producers report their sales data to an independent accounting firm and summary reports are sent to the Managing Agency. From the summary reports, the Managing Agency invoices the producers. The Managing Agency receives only summary reports as the Managing Agency has representatives from major beverage producers and smaller producers were concerned about large producers seeing and using their sales data. Reporting of packaging sales is required every four weeks. At each following payment period, the real data is checked against the estimated data and the deposit charges are corrected<sup>521</sup>. When new packaging types are introduced, container manufacturers must pay a yearly fee of DKK2000<sup>522</sup>. Fees paid by producers are used to improve efficiencies in retail shops<sup>523</sup>.

In Finland, fees for beverage producers include an initial joining fee of €7,600 and a product registration fee of €350 per item. In Estonia, fees for beverage producers include an initial joining fee of €31.96, with no charge being placed on product registration<sup>524</sup>.

<sup>516</sup> BottleBill.org, year unknown, Québec, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/canada/quebec>

<sup>517</sup> BottleBill.org, year unknown, Prince Edward Island, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/canada/prince-edward-island>

<sup>518</sup> BottleBill.org, 2019, Ontario, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/canada/ontario>

<sup>519</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>520</sup> TOMRA, 2018, Lithuania Exceeds Container Return Rate Expectations as TOMRA Supports New State-Of-The-Art Deposit System

<sup>521</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>522</sup> Eunomia Research & Consulting, 2011, Options and Feasibility of a European Refund System for Metal Beverage Cans

<sup>523</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK

<sup>524</sup> Eunomia Research & Consulting, 2011, Options and Feasibility of a European Refund System for Metal Beverage Cans



Pricing is used in Croatia as a mechanism to incentivise beverage producers to use reusable packaging. Producers must pay a variety of fees at every quarter including a disposal fee, a returnable fee and a stimulative fee. These three fees are explained below:

- The disposal fee is a non-refundable fee placed on single use packaging only. The fee is 0.10HRK per beverage container.
- The returnable fee is placed on single use packaging and intends to encourage producers to ensure that their single use packages are being collected as part of the scheme. This is paid by producers when the packaging is first introduced. Producers pay for the new amount of packaging supplied to the market, minus the amount of old packaging which has been delivered to the recycling factory. Manufacturers who organise the collection of their materials and collect more than 50% of what they put on the market are exempt from paying the fee. If producers fail to meet the 50% threshold, they lose their ability to collect their own packaging and must hand the responsibility to the Managing Agency, and again pay the relevant fees. The returnable fee is returned to the producer once their products are sold and returned as part of the scheme.
- The stimulative fee is also placed on single use packaging only. This fee intends to encourage producers to manufacture reusable and returnable packaging. If a producer has sold a certain number of containers that has had multiple uses in the previous year, then the stimulative fee does not have to be paid anymore for that type of container. Small producers, who introduce less than a certain number of containers per year do not have to pay the stimulative fee<sup>525</sup>.

### 10.2.1.2 Commercial Tensions

Some impacts on commercial tensions across the supply chain have been identified as a consequence of mandated schemes. Where information was available on those situations and how those were dealt with, these are discussed below.

#### 10.2.1.2.1 Australia

In March 2013, the beverage industry legally challenged the newly introduced scheme of the Northern Territory. Beverage producers included Coca-Cola Amatil (Australia), Schweppes Australia and Lion. The three companies challenged the validity of the scheme against the *Commonwealth Mutual Recognition Act 1992*. The *Commonwealth Mutual Recognition Act* states the purpose of “promoting the goal of freedom of movement of goods and service providers in a national market in Australia”. The Act exists to enable free trade between the Australian states. This means that a beverage that is legal to be sold in one state should be legally sold in another state with no added restrictions. The Northern Territory scheme required that the beverage containers needed to be approved and carry a specific refund marking before being sold in Northern Territory. The Federal Court found in favour of the beverage industry and deemed the Northern Territory scheme invalid. A permanent exemption from the Act has however now been granted to Northern Territory's scheme with support from all other Australian jurisdictions<sup>526</sup>.

In New South Wales, to ensure fairness to all first suppliers, the Managing Agency asked suppliers in its first newsletter to be informed if they are suspicious of other suppliers who may not be fulfilling their legal responsibilities<sup>527</sup>. Penalties apply in New South Wales if suppliers are found to be selling eligible

<sup>525</sup> BottleBill.org, 2011, Croatia, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/worldwide/croatia>

<sup>526</sup> South Australia EPA, date unknown, Environmental Info, available from: [https://www.epa.sa.gov.au/environmental\\_info/container\\_deposit/faqs](https://www.epa.sa.gov.au/environmental_info/container_deposit/faqs)

<sup>527</sup> NSW EPA, 2019, NSW Supplier Obligations.

containers that are not compliant with the regulations. This includes the possibility of the EPA revoking the approval of that container and making it an offence to be sold in the state<sup>528</sup>.

#### 10.2.1.2.2 United States of America

Even though the Michigan scheme has been operational for over forty (40) years, the Michigan Soft Drink Association remains strongly opposed to the scheme and any proposed expansions for the scope of containers. The association have stated that the beverage industry in Michigan is one of the most sustainable in the state and the best performer in terms of recycled content. According to the association, this is because 100% of soft drink containers are recyclable and 95% to 98% are recycled. The association claims that the scheme adds unnecessary costs to soft drinks companies in the order of millions of dollars every year and that that money and effort should instead be focused on more comprehensive local recycling programs. The association has posted their opposition on their official website and have provided detailed reasoning behind their arguments against the scheme<sup>529</sup>.

#### 10.2.1.2.3 Canada

In Canada, there are ongoing battles with soft drink producers and grocery retailing companies resisting deposits. This is especially evident in Ontario<sup>530</sup> and Quebec.

In Quebec, soft drink producers have been unhappy with the fact that their beverages bear a deposit while water, juice, ice teas and other beverages do not have a deposit. The government considered imposing the scheme on those beverage types however the soft drink producers and grocery retailers lobbied for a kerbside solution. In 1998, the government announced a kerbside recycling system for these beverages, to be funded by industry<sup>531</sup>.

#### 10.2.1.2.4 Europe

When the scheme was being proposed in Germany, beverage companies, alongside retailers, took the scheme to the Federal Constitutional Court to stop the scheme from happening as they were concerned it would hurt their business<sup>532</sup>. The scheme still went ahead despite these attempts. Beverage producers have been found to take advantage of the definitions of the scope of containers in Germany by lowering the calorific content and claiming the beverage to be a slimming beverage. By making false dietary claims (i.e., calorific content), beverage producers have attempted to avoid paying scheme costs<sup>533</sup>.

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*One of the largest logistical requirements at the beginning of a scheme is contracts organisation and management*

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In Denmark, wine and spirits producers have expressed that they are not interested in participating in the scheme. Tensions were evident between beverage producers because Carlsberg, a major producer, was also involved in the Managing Agency and beverage producers were worried that it would be able to access their data and exclude them from the market. This led to the current reporting and accounting system where beverage producers send their financial and sales data to a third party that will not give access to any other beverage producer. The Managing Agency will only receive the summary of data<sup>534</sup>.

<sup>528</sup> NSW EPA, 2019, NSW Supplier Obligations.

<sup>529</sup> Michigan Soft Drink Association, 2019, Comprehensive Local Recycling Programs Are a Better Alternative, available from: <http://www.misoftdrink.net/deposit-law---recycling.html>

<sup>530</sup> BottleBill.org, 2019, Ontario, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/canada/ontario>

<sup>531</sup> BottleBill.org, year unknown, Québec, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/canada/quebec>

<sup>532</sup> Deutsche Welle, 2013, Germany consumers kick the can, available from: <https://www.dw.com/en/german-consumers-kick-the-can/a-16604691-0>

<sup>533</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK

<sup>534</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK

### 10.2.1.3 Market Placement

The drop in the market share of refillable containers and the increase in single-use packaging can be said to be one of the biggest similarities found across different existing schemes in relation to the impact of a scheme on market placement. This was discussed in detail in Section 9.

According to the study undertaken by IPART on the first year of operation of the New South Wales scheme, the scheme did not have any unjustified impacts on market competition of beverage prices. The price increases were able to be fairly attributed to the scheme and a workable competitive market<sup>535</sup>. Similarly, in its first year of operation, the Queensland Productivity Commission (QPC) undertook a study on the impact of the Queensland scheme. According to the study, there was no evidence of market competition in its first year of operation and no evidence of poor performance or conduct from producers<sup>536</sup>.

In Germany, it is said that large drink manufacturers are benefitting as the system does not require deposits on all containers. However small bottlers of mineral water, fruit juices and breweries are said to be at a disadvantage. The Managing Agency has stated that they would consider adjusting prices to protect smaller producers<sup>537</sup>.

Job losses have been experienced in New York by producers who supply in metal cans due to the large decline of beverages being sold in metal cans. This may not be only due to the scheme however it is identified as a contributing factor. Approximately 135 jobs have been reported to be lost. In comparison however, it has been said that the net employment gains from the scheme in New York are between 4,315 to 5,079. While schemes may lead to a decrease in some container materials, beverage producers will need to adapt and use new materials for their beverage containers, for example, LPB to PET if appropriate<sup>538</sup>.

### 10.2.1.4 Required Logistical Modifications

Beverage producers are required to undertake modifications to their factories, systems and operations because of the changes brought on by schemes. This also leads to them being commercially impacted when required to change their container designs, including labelling<sup>539</sup>.

In the first month of the operation of the New South Wales scheme, over 530 suppliers had or were in the process of signing up to the scheme<sup>540</sup>. Similarly, in Queensland, between the 1<sup>st</sup> of November 2018 and the 20<sup>th</sup> of June 2019, 413 contracts were executed between beverage producers and the Managing Agency. The 413 contracts included the top ten (10) companies by production volume. Those ten (10) companies generated approximately 90% of container volumes sold in Queensland. The remaining 10% of companies produced 5% to 10% combined<sup>541</sup>. By looking at these numbers, it is evident that one of the largest logistical requirements at the beginning of a scheme is contracts organisation and management. In the Australian Capital Territory, some industry organisations provided beverage producers contractual support and advice at the beginning of the scheme<sup>542</sup>.

<sup>535</sup> NSW Department of Planning, Industry & Environment, 2019, NSW Container Deposit Scheme - Frequently asked questions.

<sup>536</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>537</sup> Deutsche Welle, 2013, Germany consumers kick the can, available from: <https://www.dw.com/en/german-consumers-kick-the-can/a-16604691-0>

<sup>538</sup> BottleBill.org, year unknown, Bottle Bills Create Jobs, available from: <http://www.bottlebill.org/dev/index.php/benefits-of-bottle-bills/bottle-bills-create-jobs>

<sup>539</sup> : Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>540</sup> NSW EPA, 2019, NSW Supplier Obligations.

<sup>541</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>542</sup> Exchange for Change, date unknown, ACT Container Deposit Scheme -Guidelines for beverage suppliers.

In relation to systems, beverage producers are sometimes required to ensure that the containers they use for their beverages are approved by the Managing Agency or the regulator before being able to supply them to the market. In the Northern Territory in Australia, producers must receive approval for the containers that they intend to sell, before being able to sell them<sup>543</sup>. Similarly, as previously mentioned producers in Sweden and Germany are required to register each product and its barcode before being able to supply them to the market<sup>544</sup>.

As previously mentioned, to support with the required changes, producers in New South Wales were given a two-year transition period to allow them to get rid of their old stock and ensure that their new stock was compliant with the regulations<sup>545</sup>. In Germany, a court case found that the allocated transition period of six months was not enough to allow producers of mineral water to adapt their production of single-use packaging to the new system<sup>546</sup>. In Michigan, North America, kombucha was recently introduced into the container return scheme which included an approximate 2-year transition period to enable retailers and manufacturers to comply with updated scheme requirements. After the transition period all parties in the distribution chain are required to begin collecting and refunding deposits on kombucha containers, as they do for other non-alcoholic carbonated beverages. Further, kombucha containers that are not marked with the required deposit information may not validly be sold in the state<sup>547,548</sup>.

In Maine, to ease logistical requirements and increase the efficiency of the scheme, "co-mingling agreements" were created. A similar arrangement of co-mingling groups in Vermont was discussed in Section 10.2. Co-mingling groups in Maine include two thirds of the beverage industry and consist of two or more distributors of beverage containers. The groups permit their supplied beverage containers to be comingled by the retailers and redemption centres when collected. Containers can be comingled by beverage type, material and size. Beverage distributors who are a part of the co-mingling groups pick up the beverage containers subject to the agreement in their assigned geographical locations. The co-mingling agreement allows sorting, handling and transportation logistics and costs to be reduced for distributors, redemption centres and retailers<sup>549</sup>.

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*To support with required changes, producers in New South Wales were given a two-year transition period to allow them to get rid of their old stock and ensure that their new stock was compliant with the regulations*

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In Norway, the registration process for beverage producers was said to be difficult and cause inefficiencies for smaller manufacturers. The registration process was updated in 2011 to encourage smaller importers and manufacturers be part of the scheme. The improvements in efficiency were also said to lead to savings in costs and benefits to the environment<sup>550</sup>.

Producers may also be required to ensure that their label space is flexible and allows for new setup to accommodate the design requirements from the scheme. As mentioned previously, in Germany, separate printing stations are required for the use of the specialist ink that is mandated by the

<sup>543</sup> NT EPA, date unknown, Regulated and Approved Containers, available from: <https://ntepa.nt.gov.au/container-deposits/approved-containers>

<sup>544</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>545</sup> NSW EPA, 2019, NSW Supplier Obligations.

<sup>546</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK

<sup>547</sup> [http://www.legislature.mi.gov/\(S\(shqqn4wydhipur2uytskf5zl\)\)/mileg.aspx?page=getObject&objectName=mcl-Initiated-Law-1-of-1976](http://www.legislature.mi.gov/(S(shqqn4wydhipur2uytskf5zl))/mileg.aspx?page=getObject&objectName=mcl-Initiated-Law-1-of-1976)

<sup>548</sup> [https://www.michigan.gov/documents/taxes/Notice\\_-\\_Kombuch\\_Products\\_Under\\_Bottle\\_Deposit\\_Law\\_673754\\_7.pdf](https://www.michigan.gov/documents/taxes/Notice_-_Kombuch_Products_Under_Bottle_Deposit_Law_673754_7.pdf)

<sup>549</sup> BottleBill.org, 2018, Maine, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/usa/maine>

<sup>550</sup> Infinitum, 2016, Infinitum Annual Report 2016

scheme<sup>551</sup>. In other cases, producers may be simply required to alter their designs in their existing systems to ensure manufactured containers are compliant. Some schemes provide helpful information to guide producers with the changes that should be undertaken. California's Managing Agency has provided an online flyer that includes an image of a bottle and points out the changes required to the container. The information on the flyer includes:

- The options that can be included as the scheme logo, and where it should be located for glass and plastic bottles;
- The options for the location of the beverage information and brand label for glass and plastic bottles;
- The required locations and dimensions of the scheme label on aluminium or bimetal cans;
- The required locations and dimensions of the scheme label for plastic cups; and
- The required format of the scheme label.

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*In addition to direct economic gains, an increase in employment has been experienced in Michigan where the scheme is said to have resulted in 4,648 net employment gains.*

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The flyer also identifies the sections of the regulation where this information is from, and who to contact if container manufacturers have queries. A container labelling contact has been created to assist with design specific information<sup>552</sup>.

According to a study that considered an expansion for the scope of containers in Vermont, a bigger scope of containers would cause logistical complications for producers. A manufacturer would need to isolate their products that are going to Vermont from other products. However, the producer might not know how many bottles would be needed by Vermont and may under or overestimate. According to the study, producers often prefer not to separate the same product as it is more efficient for them to ship products together to different distribution centres<sup>553</sup>.

Understanding that logistical requirements associated with schemes can be a hinderance to smaller producers, the scheme in Connecticut allows smaller beverage producers to seek an exemption. Manufactures must show that they supply less than 250,000 non-carbonated beverages of 20 ounces (591mL) or less in size, per year, to be able to seek an exemption from the scheme<sup>554</sup>.

### 10.2.1.5 Exporting Exemptions

In many schemes, suppliers that intend to sell eligible containers outside of a state or country with a scheme are eligible for a refund of the scheme deposits.

In New South Wales, first suppliers that sell to customers who wish to export containers can claim a rebate for the exported eligible containers. To be eligible, exporters must enter into an export arrangement with the Scheme Coordinator, register online as an exporter and sign an exporter deed poll<sup>555</sup>.

According to Exchange for Change (i.e., the New South Wales scheme Managing Agency), many suppliers were confused in the first month of the scheme's operation about export exemptions and had

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<sup>551</sup> Eunomia Research & Consulting, 2011, Options and Feasibility of a European Refund System for Metal Beverage Cans

<sup>552</sup> California Department of Resources Recycling and Recovery (CalRecycle), 2016, California Beverage Container Labeling, available from: <https://www2.calrecycle.ca.gov/Publications/Details/1573>

<sup>553</sup> Northbridge Environmental Management Consultants, 2006, Analysis of Vermont's Bottle Bill: Costs, Impacts and Expansion

<sup>554</sup> State of Connecticut Department of Energy & Environmental Protection, year unknown, Bottle Bill FAQ, available from: [https://www.ct.gov/deep/cwp/view.asp?a=2714&q=324834&depNav\\_GID=1645](https://www.ct.gov/deep/cwp/view.asp?a=2714&q=324834&depNav_GID=1645)

<sup>555</sup> Exchange for Change, date unknown, Drinks suppliers and exporters, available from: <https://returnandearn.org.au/partners/drinks-suppliers/>

questions on what happens if one of their customers intends to export the beverages that they supplied into the state market. When deciding on the process for exports, the Managing Agency facilitated a workshop with the scheme regulator to work out the best process for suppliers. The following two (2) objectives were outlined for the process:

- For the process to be simple and convenient for a broad range of stakeholders, including large corporations and small retailers, and
- To ensure that the risk of fraud transactions such as over-claiming is minimised.

If over-claiming occurs, other suppliers are negatively impacted because they are required to pay more to cover containers that were not exported. Suppliers who apply for a rebate must provide information on the volume of containers first supplied and the volume exported. First suppliers can only claim credit for the previous month's exports. Exports are subtracted from the first supplier's sales volume. The Managing Agency audits export claims to verify that the information is correct. If misleading information is provided, the Scheme Coordinator can prohibit the supplier from making future export claims in respect to that particular distributor<sup>556</sup>. Similarly, in Queensland, an exporter of eligible containers can claim for an export refund and so, the exporter must have an Export Refund Claim Agreement with the Managing Agency. This allows the Scheme Coordinator to audit and verify the claims<sup>557</sup>.

Airlines and cruise ships are often identified as two industries that are eligible for refunds from the scheme. Examples where this is recognised include New South Wales, New York<sup>558</sup> and Hawaii<sup>559</sup>.

### 10.2.1.6 Economic Benefits and Funding

Economic benefits and funding have been experienced by beverage producers across the different schemes. Examples are identified in the following sections.

#### 10.2.1.6.1 Australia

In Australia, examples of government and industry support have been seen across the different schemes. In Queensland, at the start of the scheme, the Queensland Government gave COEX an AUD\$35million interest free 18-month loan to provide working capital for the operation of the scheme<sup>560</sup>. This allowed the formation of a liaison group that consisted of the retail industry and beverage producers. The scheme's fees were frozen in the first year of operation to ensure costs were kept down for manufacturers and consumers<sup>561</sup>.

In New South Wales, the state government provided manufacturers who were negatively impacted at the start of the scheme with a loan. Negative impacts were said to be felt by some manufacturers due to the requirement to pay upfront fees for the scheme before receiving the economic returns from next month's operations<sup>562</sup>.

Some industry associations in the Australian Capital Territory provided beverage suppliers with legal advice and support on the contract agreements required to be organised with the Managing Agency<sup>563</sup>.

<sup>556</sup> Exchange for Change, 2017, Newsletter November 2017.

<sup>557</sup> Container Exchange, date unknown, Beverage manufacturers, available from: <https://www.containerexchange.com.au/industry-partners/>

<sup>558</sup> New York State Department of Environmental Conservation, year unknown, Frequently Asked Questions About the Bottle Bill, available from: <https://www.dec.ny.gov/chemical/57687.html>

<sup>559</sup> State of Hawaii Department of Health, 2020, Distributors, available from: <https://health.hawaii.gov/hi5/distributors/>

<sup>560</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>561</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>562</sup> Marsden Jacob Associates, 2018, A Model Framework for Container Refund Scheme in Tasmania.

<sup>563</sup> Exchange for Change, date unknown, ACT Container Deposit Scheme -Guidelines for beverage suppliers.

### 10.2.1.6.2 United States of America

In the United States of America, it was reported that costs to beverage producers are offset by the sale of scrap cans and bottles and by short-term investment made on the deposits collected from retailers. Beverage producers are also said to experience windfall profits from consumers that don't return their containers and don't claim their refunds. In many American states, unredeemed deposits are kept by the beverage producers. These amount to millions of dollars per year<sup>564</sup>. In California, unredeemed deposits have been used by the state to offset processing fees paid by producers<sup>565</sup>.

Benefits from unclaimed refunds are experienced by deposit initiators in New York who are able to keep 20% of the unredeemed deposits. Deposit initiators must give the other 80% of the unredeemed deposits to the New York State Department of Taxation and Finance. However, 100% of the unredeemed deposits used to be the property of the deposit initiators; but this was changed in 2009 in an amendment to the regulations<sup>566</sup>.

In Oregon, beverage producers are said to generate USD\$30million annually from 600million unredeemed containers. Some of the revenue is used to improve the scheme and build new redemption centres, however considering that each redemption centre costs approximately USD\$1.5million to build, beverage producers are still able to use a portion of the unredeemed deposits as revenue<sup>567</sup>.

In addition to direct economic gains, an increase in job positions has been experienced in Michigan where the scheme is said to have resulted in 4,648 net employment gains. The employment gains consist primarily of beverage producers that use refillable bottles, providing employment for product line workers, sorters and bottle washers. Beer brewers have experienced an increase of 68 new jobs, due to the increased frequency of bottles deliveries to retailers and collections of empty containers<sup>568</sup>. Employment gains have also been reported for other American states as a consequence of their schemes. These employment benefits however are not necessarily only attributed to the beverage industry, but instead include a range of stakeholders involved in the scheme:

- Oregon: 348 to 410 net employment gains.
- Maine: 642 net employment gains.
- New York: 4,317 to 5,079 employment gains.
- Iowa: 1,200 employment gains<sup>569</sup>.

The Oregon Beverage Recycling Cooperative (OBRC) is a private company run by beverage producers in Oregon and is responsible for the collection of the redeemed containers. As of 2019, the company had 450 employees and an annual budget of USD\$34million<sup>570</sup>.

<sup>564</sup> BottleBill.org, year unknown, What is a Bottle Bill?, available from: <http://www.bottlebill.org/index.php/about-bottle-bills/what-is-a-bottle-bill>

<sup>565</sup> Sound Resource Management Group, City of Tacoma and Green Solutions, 2005, Economic & Environmental Benefits of a Deposit System for Beverage Containers in the State of Washington.

<sup>566</sup> BottleBill.org, 2018, New York, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/usa/new-york>

<sup>567</sup> Willamette Week, 2017, Corporate Lobbyists Turned Oregon's Iconic Bottle Bill Into a Sweet Payday For Their Clients, available from: <https://www.wweek.com/news/state/2017/02/01/corporate-lobbyists-turned-oregons-iconic-bottle-bill-into-a-sweet-payday-for-their-clients/>

<sup>568</sup> BottleBill.org, year unknown, Bottle Bills Create Jobs, available from: <http://www.bottlebill.org/dev/index.php/benefits-of-bottle-bills/bottle-bills-create-jobs>

<sup>569</sup> BottleBill.org, year unknown, Bottle Bills Create Jobs, available from: <http://www.bottlebill.org/dev/index.php/benefits-of-bottle-bills/bottle-bills-create-jobs>

<sup>570</sup> Oregon Beverage Recycling Cooperative, year unknown, About OBRC and the Services We Offer, available from: <https://www.obrc.com/Distributors>

### 10.2.1.6.3 Canada

Like many American states, unredeemed deposits are retained by beverage producers in multiple Canadian provinces. These include the provinces of Alberta, British Columbia, Manitoba, Ontario, Quebec<sup>571</sup>. In Quebec, soft drink producers are able to keep any revenue from the returned containers that they collect<sup>572</sup>.

### 10.2.1.6.4 Europe

In Lithuania, producers and importers are said to be the primary sponsors of the scheme. This means that they receive an income from the scheme, with the percentages below showing the breakdown of their income:

- 30% from the sale of raw materials;
- 17% from unredeemed deposits; and
- 53% from producer subsidy<sup>573</sup>.

As of 2018, it was estimated that since the introduction of the German scheme, beverage producers in Germany had made approximately €3billion from unredeemed deposits. In Germany, the Managing Agency does not handle financial flows and leaves all accounting to be dealt with individually by beverage producers. This is a benefit to producers who are able to keep the revenue from the scheme. If beverage producers don't wish to manage the accounting of the system, they can engage commercial service providers to manage financial flows for them<sup>574</sup>.

In Sweden, producers are usually required to pay fees that cover administration and sorting. However, in 1998, administration fees were removed for producers of aluminium cans as the returns achieved from the system for aluminium were very high<sup>575</sup>.

## 10.3 Scheme Awareness

The responsibility of the beverage producer to provide scheme awareness (in accordance with the scheme Regulations) is often included in the scheme logo and container label that they must adhere to and add to their containers. This requirement has been discussed thoroughly throughout Section 10.

In most schemes, managing agencies and Scheme Coordinators have created dedicated online pages with helpful resources and contact information targeted to producers. The Managing Agency in New South Wales continuously uploads helpful resources for suppliers. These include documents that explain the below:

- The process for registering to be a first supplier;
- How scheme payments are made;
- How scheme payments are calculated; and
- The common dispute deed.

Additionally, the Managing Agency publishes monthly pricing and invoicing newsletters that provide a summary of last month's operations and financial flows<sup>576</sup>.

<sup>571</sup> BottleBill.org, 2019, All Provinces Table, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/canada/compare-all-provinces>

<sup>572</sup> BottleBill.org, year unknown, Québec, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/canada/quebec>

<sup>573</sup> Uzstato Sistemos Administratorius, 2018, Lithuania's Deposit System

<sup>574</sup> Institute of Economic Affairs, year unknown, A Load of Rubbish? Introducing a Deposit Return Scheme to the UK.

<sup>575</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK



In Queensland, the Managing Agency ran workshops with beverage producers before the scheme was started to ensure that they were clear of their involvement. This workshop educated beverage producers on the legislative requirements and their responsibilities as part of the scheme<sup>577</sup>. The Managing Agency also has an online page dedicated to producers. The page includes training material and an online course that producers can use to learn about their responsibilities and implications of the scheme on them. The page also includes an email address that can be contacted for more information and a link to a portal that registered manufacturers can access<sup>578</sup>.

Similarly, in Lithuania, a page specific to manufacturers is available online. The page directs manufacturers to their responsibilities, the online registration system, how contracts with manufacturers are managed, container labelling requirements and the handling fees used for each material for that year<sup>579</sup>. As mentioned previously, the Californian Managing Agency has provided an online flyer to provide awareness to container manufacturers on their labelling responsibility. As reported for Lithuania and Queensland, the website of the Californian scheme has an online page specific to manufacturers<sup>580</sup>.

In relation to beverage producers using the scheme to promote awareness and marketing of their products, no information was available at the time of writing. Besides the mandated scheme labelling on beverages, there was no clear indication of beverage producers using their involvement in the scheme to provide awareness and market their brand. Compared to supplier scheme participation, beverage producer scheme involvement was more in relation to the recycled content in the beverage containers. An example is the previously mentioned case of Ice River Springs, the water bottle producer in Ontario, that has been able to use the recycled materials supplied from the scheme in their newly manufactured water bottles.

## 10.4 Roles and Responsibilities

It is evident that in most existing schemes efforts are put into clearly defining the responsibilities of beverage producers. This is because while the purpose of schemes is to place responsibility of management of resources on suppliers, it is not always clear who is responsible for the supply of beverages to the market, how to identify who is responsible, and how to be involved.

By looking at the different existing schemes, the following explanations of the roles and responsibilities relevant to beverage producers have been found.

### 10.4.1 Australia

As previously mentioned, if identified as a first supplier in New South Wales, a producer has a legal obligation to participate and fund the scheme. It is also the legal obligation of the Scheme Coordinator to ensure that first suppliers are registered and compliant<sup>581</sup>.

A first supplier is identified as anyone who makes the first supply of the eligible product in the state. First suppliers can also be identified based on the location of where the supply of the container was first

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<sup>576</sup> Exchange for Change, date unknown, Drinks suppliers and exporters, available from: <https://returnandearn.org.au/partners/drinks-suppliers/>

<sup>577</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>578</sup> Containers for Change, date unknown, Beverage Manufacturers, available from: <https://www.containersforchange.com.au/qld/beverage-manufacturers>

<sup>579</sup> Užstato Sistemose Administratorius, 2020, For manufacturers and importers, available from: <https://grazintiverta.lt/en/for-business/for-manufacturers-and-importers/>

<sup>580</sup> CalRecycle, 2018, Beverage Distributors & Manufacturers, available from: <https://www.calrecycle.ca.gov/BevContainer/BevDistman>

<sup>581</sup> NSW Department of Planning, Industry & Environment, 2019, NSW Container Deposit Scheme - Frequently asked questions.

made to a recipient. Examples of where beverage and/or container manufacturers are first suppliers are the below:

- Manufacturers in New South Wales who first supply beverage containers to a distributor or retailer in the state.
- Manufacturers in New South Wales who supply to an airline or cruise ship catering in the state.
- Manufacturers located outside of New South Wales who deliver the beverage containers to a distributor or retailer in New South Wales.
- A producer who has procured both the containers and the beverage and has combined them and is selling them to consumers in New South Wales<sup>582</sup>.

First suppliers of beverage containers must ensure that eligible products contain the refund marking, comply with the barcode requirements and do not contain a ring-pull lid. The reason for the exclusion of the lid is to avoid creating another unwanted stream of litter. These requirements apply at all points in the supply chain<sup>583</sup>.

First suppliers are required to enter into a Supply Arrangement contract with the Scheme Coordinator and are required to sign a Supply Arrangement, a Supplier Side Deed and an Accession Deed Poll<sup>584</sup>. First suppliers are also required to ensure that the supplied container has a container approval relevant to that container. A container approval is provided for each class of beverage supplied into the market. Container approvals help identify beverages when refunded. Producers must make sure that the details of their container approvals are recorded correctly in the 'NSW CDS Container Approval Portal'. A container approval includes a description of the below information:

- The product in the container;
- The container material, such as aluminium, glass, PET, HDPE;
- The container's physical attributes, such as size and weight; and
- Other attributes that identify the container, such as the barcode.

After the two-year transition period, the scheme regulator had the right to undertake compliance measures to ensure that all registered containers meet the regulated requirements<sup>585</sup>. The requirements to register the containers adds another layer of transparency and helps to ensure that no beverage producers are selling eligible containers without being a part of the scheme.

The contract between the Managing Agency and first suppliers states that payments for invoices are to be made within seven days. If first suppliers do not understand the invoice or how it is calculated, this does not excuse them from paying invoices on time. If invoices are not paid on time, first suppliers can be prevented from supplying products into New South Wales<sup>586</sup>.

Similar definitions apply to suppliers in the Australian Capital Territory scheme. The scheme is similarly funded by the party that is first responsible for supplying the beverages in the state. Additionally, like New South Wales, the responsibility to identify suppliers falls on the Scheme Coordinator.

<sup>582</sup> NSW EPA, date unknown, NSW first supply approach.

<sup>583</sup> NSW EPA, 2019, NSW Supplier Obligations.

<sup>584</sup> Exchange for Change, date unknown, Drinks suppliers and exporters, available from: <https://returnandearn.org.au/partners/drinks-suppliers/>

<sup>585</sup> NSW Environment Protection Authority, 2019, Container compliance deadline 2019, available from: <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/return-and-earn/container-compliance-deadline-2019>

<sup>586</sup> Exchange for Change, 2018, Dear First Suppliers, available from: <https://returnandearn.org.au/wp-content/uploads/2018/05/Dear-First-Suppliers.pdf>

In order to support with understanding who is identified as a supplier, online guidelines<sup>587</sup> provided by the Managing Agency offer the below explanations to help understand which party is the supplier:

- “Ownership: The entity that owns the beverage, or owns the brand rights to the beverage, or has the rights to deal with the beverage (e.g., sell, give away) when it enters the Australian Capital Territory is considered the "supplier" for the Australian Capital Territory Container Deposit Scheme.
- Change of Title: When a beverage product is sold, its ownership (or title) changes. For beverages imported to the Australian Capital Territory, the entity that has the title to the beverage product immediately prior to it entering the Australian Capital Territory is considered the "supplier" for the Australian Capital Territory Container Deposit Scheme. For beverages manufactured in the Australian Capital Territory, the manufacturer will likely be the "suppliers" except where it manufactures for a separate entity which owns the beverage.
- Location of supply: The supply occurs where the supplier passes over the beverage container to the recipient in the Australian Capital Territory.”

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*In many cases beverage producers are responsible for funding schemes and are usually managed and regulated by the Managing Agency and/or the scheme regulator. This helps ensure that they remain accountable and compliant and that support is provided where necessary*

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In order to supply eligible beverages in the Australian Capital Territory, the following items are required to be held by suppliers:

- A supply arrangement between the supplier and the Scheme Coordinator. The supply arrangement identifies the process for the fee calculations and how payments are made; and
- A container approval that identifies and tracks the beverage containers.

The Scheme Coordinator is responsible for ensuring that the suppliers sign the supply arrangement and make contributions. Container approvals are issued by the state government; however, to reduce systematic costs of the scheme, the state government will also recognise container approvals acquired in other Australian states<sup>588</sup>.

As previously stated, beverage manufacturers are responsible for funding the scheme in Queensland. To be able to supply eligible containers in Queensland, beverage producers must enter into a Container Recovery Agreement (CRA) with the Managing Agency. Beverage producers are responsible for ensuring that the refund mark is labelled on the eligible containers<sup>589</sup>, and for ensuring that the environmental impacts of the empty beverage containers are minimised<sup>590</sup>.

In South Australia, a beverage supplier must hold a waste management agreement and a contract with a super collector in order to be able to sell eligible beverages to consumers. Super collectors are responsible for the collection and recycling of the collected eligible beverages<sup>591</sup>. The *Environment Protection Act 1993* defines 'sell' as:

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<sup>587</sup> Exchange for Change, date unknown, ACT Container Deposit Scheme -Guidelines for beverage suppliers, available from: [https://actcds.com.au/wp-content/uploads/Definition\\_of\\_a\\_Supplier\\_into\\_ACT.pdf](https://actcds.com.au/wp-content/uploads/Definition_of_a_Supplier_into_ACT.pdf)

<sup>588</sup> Exchange for Change, date unknown, ACT Container Deposit Scheme -Guidelines for beverage suppliers, available from: [https://actcds.com.au/wp-content/uploads/Definition\\_of\\_a\\_Supplier\\_into\\_ACT.pdf](https://actcds.com.au/wp-content/uploads/Definition_of_a_Supplier_into_ACT.pdf)

<sup>589</sup> Container Exchange, date unknown, Beverage manufacturers, available from: <https://www.containerexchange.com.au/industry-partners/>

<sup>590</sup> Queensland Government, 2019, About Containers for Change, available from:

<https://www.qld.gov.au/environment/pollution/management/waste/recovery/reduction/container-r>

<sup>591</sup> SA EPA, 2015, Container deposit legislation -a South Australian environmental success story

- a) “to supply on a gratuitous basis for commercial promotional purposes; and
- b) to offer or display for sale or such supply<sup>592</sup>.”

In the *Waste Avoidance and Resource Recovery Amendment (Container Deposit) Act 2019*<sup>593</sup> for the new Western Australian scheme, a lot of attention has been placed on defining who is identified as the ‘First Responsible Supplier’ and thus is responsible for scheme liability. The below definitions are provided in the Act:

“47D. First responsible supplier

- a. Subject to subsection (2), the first responsible supplier of a beverage product is —
  - a) the person who first supplies the beverage product in the State; or
  - b) the person who, under the regulations, is taken to be the first responsible supplier of the beverage product.
- b. A person is not the first responsible supplier of a beverage product if, under the regulations, the person is taken not to be the first responsible supplier of the beverage product.
- c. Unless the regulations provide otherwise, if a person (the transporter) only transports a beverage product between the supplier of the beverage product and the recipient of the beverage product, each of the following is not a supply of the beverage product —
  - a) the transfer of the beverage product from the supplier to the transporter;
  - b) the transfer of the beverage product from the transporter to the recipient.
- d. Unless the regulations provide otherwise, if a person (the contract bottler) is engaged under a contract to make a beverage product or fill containers with a beverage for another person (the contract counterparty), in circumstances where the beverage product is manufactured solely for the contract counterparty, the transfer of the beverage product from the contract bottler to the contract counterparty following completion of the manufacturing process is not a supply.
- e. For the purposes of subsections (1)(b) and (2), the regulations may provide for circumstances in which a person, or a person who belongs to a prescribed class or who meets prescribed criteria —
  - a) is taken to be the first responsible supplier of a beverage product or class of beverage products; or
  - b) is taken not to be the first responsible supplier of a beverage product or class of beverage products.
- f. Without limiting subsection (5), the circumstances referred to in that subsection may include circumstances where a person has entered into an agreement with another person as to who is to be the first responsible supplier of a beverage product.”

The *Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulations 2019*<sup>594</sup> also provides further clarification of a similar nature to explain who the First Responsible Supplier is.

The below is an extract:

<sup>592</sup> South Australia EPA, date unknown, Environmental Info, available from:

[https://www.epa.sa.gov.au/environmental\\_info/container\\_deposit/faqs](https://www.epa.sa.gov.au/environmental_info/container_deposit/faqs)

<sup>593</sup> The Western Australia Government, *Waste Avoidance and Resource Recovery Amendment (Container Deposit) Act 2019*, available from:

[https://www.legislation.wa.gov.au/legislation/prod/filestore.nsf/FileURL/mrdoc\\_41821.pdf/\\$FILE/Waste%20Avoidance%20and%20Resource%20Recovery%20Amendment%20\(Container%20Deposit\)%20Act%202019%20-%20%5B00-00-01%5D.pdf?OpenElement](https://www.legislation.wa.gov.au/legislation/prod/filestore.nsf/FileURL/mrdoc_41821.pdf/$FILE/Waste%20Avoidance%20and%20Resource%20Recovery%20Amendment%20(Container%20Deposit)%20Act%202019%20-%20%5B00-00-01%5D.pdf?OpenElement)

<sup>594</sup> The Western Australia Government, *Waste Avoidance and Resource Recovery Amendment (Container Deposit Scheme) Regulations 2019*, available from:

[https://www.legislation.wa.gov.au/legislation/prod/filestore.nsf/FileURL/mrdoc\\_42489.pdf/\\$FILE/Waste%20Avoidance%20and%20Resource%20Recovery%20Regulations%202019%20-%20%5B00-00-01%5D.pdf?OpenElement](https://www.legislation.wa.gov.au/legislation/prod/filestore.nsf/FileURL/mrdoc_42489.pdf/$FILE/Waste%20Avoidance%20and%20Resource%20Recovery%20Regulations%202019%20-%20%5B00-00-01%5D.pdf?OpenElement)

“3E. Meaning of first responsible supplier

- (1) This regulation applies if a person (the contract bottler) is engaged under a contract to make beverage products or fill containers with a beverage for another person (the contract counterparty), in circumstances where the beverage products are manufactured solely for the contract counterparty.
- (2) If the contract bottler and the contract counterparty do not expect that the contract bottler will make more than 300,000 beverage products (or fill more than 300,000 containers) for the contract counterparty in a financial year, the contract bottler and the contract counterparty may enter into an agreement under which the contract bottler agrees that it is the first responsible supplier of the beverage products (a first supplier agreement).
- (3) For the purposes of section 47D of the Act, if the contract bottler and the contract counterparty have entered into a first supplier agreement, then, in relation to the first 300,000 beverage products the contract bottler makes (or the first 300,000 beverage products consisting of containers the contract bottler fills) for the contract counterparty in each financial year, the contract bottler is taken to be the first responsible supplier and the contract counterparty is taken not to be the first responsible supplier.
- (4) Subregulation (3) does not apply unless the contract bottler has
  - a) provided a copy of the first supplier agreement to the Coordinator; and
  - b) if the first supplier agreement is amended — provided a copy of the amended agreement to the Coordinator.
- (5) The contract bottler must notify the Coordinator if the first supplier agreement ceases to be in force.”

## 10.4.2 United States of America

In many American states, the deposit initiator is the first party to collect the deposit value on a sold beverage container. The New York scheme defines the deposit initiator as the below:

- A bottler of beverages;
- A distributor of beverages in beverage containers with an established refund value, if such distributor did not directly or indirectly purchase the container from a registered deposit initiator;
- A dealer who sells or offers for sale a beverage in beverage containers, if such dealer did not directly or indirectly purchase the container from a registered deposit initiator; or
- An agent acting on behalf of a registered deposit initiator.

A deposit initiator in New York must be registered with the New York State Department of Taxation and Finance. The deposit initiator is also responsible for labelling the containers and the collection and processing of empty containers<sup>595</sup>.

In Connecticut, manufacturers are identified as those responsible for funding the scheme. The law defines "manufacturers" as either:

1. “every person bottling, canning or otherwise filling beverage containers for sale to distributors or dealers, or
2. in the case of a private label brand, the owner of the private label trademark<sup>596</sup>.”

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ance%20and%20Resource%20Recovery%20(Container%20Deposit%20Scheme)%20Regulations%202019%20-%20%5B00-b0-00%5D.pdf?OpenElement

<sup>595</sup> BottleBill.org, 2018, New York, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/usa/new-york>

In Vermont, manufacturers must register all brands of eligible beverages to be sold in Vermont. When registering, manufacturers must identify the pick-up agent who will collect the redeemed containers from the retailer and redemption centres<sup>597</sup>. In Maine, deposit initiators are also responsible for collecting the returned containers from the retailers that they deliver to and from the redemption centres that serve the retailers they deliver to<sup>598</sup>.

The scheme in California is primarily managed by the state. The state government handles all payments with deposits paid to the state by the beverage producers. Producers in California are responsible for covering the costs of recycling of each container material type that they supply to the market<sup>599</sup>. The state defines what the processing fee for recycling is based on the net cost of recycling of each container type. The processing fee is paid to the state which is then distributed to the recycling programs<sup>600</sup>.

### 10.4.3 Canada

Some Canadian provinces have multiple schemes with each scheme addressing a different beverage type. In most provinces with schemes, the beer industry funds and manages the collection of refillable and non-refillable beer containers<sup>601</sup>.

In Manitoba, beverage producers were given a choice between setting up a deposit return scheme or paying a levy of CAD2-cents on every supplied container. Beer producers were the only beverage producers that chose the first option of setting up and operating a scheme. All other beverage producers chose the latter option. There are not many breweries in Manitoba and most of the packaged beer is imported from other provinces, some already with their own scheme<sup>602</sup>.

In 2016 in Ontario, the government replaced the Waste Diversion Act of 2002 with the Waste-Free Ontario Act, which placed 100% of the responsibility of collection, transportation and processing of packaging at the end of its life on the producers. This included financial and physical responsibility<sup>603</sup>. In British Columbia, producers who use printed paper packaging that enter the province's residential waste stream must abide by the Recycling Regulation<sup>604</sup>.

On Prince Edward Island, brand owners are responsible for the collection of the deposit, however they must then provide it to the Prince Edward Island Department of Finance. Producers of non-alcoholic beverages must be registered under the Act and must ensure that their type of beverage is approved by the Minister of Environment, Energy and Forestry. Additionally, producers are required by law to prepare a plan outlining the refilling and recycling of empty containers before a beverage can be sold in the province<sup>605</sup>.

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<sup>596</sup> New York State Department of Environmental Conservation, year unknown, Frequently ASKed Questions About the Bottle Bill, available from: <https://www.dec.ny.gov/chemical/57687.html>

<sup>597</sup> Vermont Agency of Natural Resources - Waste Management & Prevention Division Solid Waste Program, 2019, Bottle Bill Fact Sheet: Manufacturers

<sup>598</sup> BottleBill.org, 2018, Maine, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/usa/maine>

<sup>599</sup> Sound Resource Management Group, City of Tacoma and Green Solutions, 2005, Economic & Environmental Benefits of a Deposit System for Beverage Containers in the State of Washington.

<sup>600</sup> Sound Resource Management Group, City of Tacoma and Green Solutions, 2005, Economic & Environmental Benefits of a Deposit System for Beverage Containers in the State of Washington.

<sup>601</sup> BottleBill.org, year unknown, Québec, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/canada/quebec>

<sup>602</sup> BottleBill.org, 2017, Manitoba, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/canada/manitoba>

<sup>603</sup> CM Consulting, 2018, Who Pays What - An Analysis of Beverage Container Collection and Costs in Canada

<sup>604</sup> CM Consulting, 2018, Who Pays What - An Analysis of Beverage Container Collection and Costs in Canada

<sup>605</sup> BottleBill.org, year unknown, Prince Edward Island, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/canada/prince-edward-island>

### 10.4.4 Europe

As part of the Lithuanian scheme, beverage producers' responsibilities include:

- Marking eligible containers with the scheme logo;
- Choosing a universal or unique barcode to be implemented on packaging;
- Charging the deposit for each container; and
- Participating in and financing the scheme<sup>606</sup>.

In Germany, beverage producers must be registered with the Managing Agency with contractual agreements established by the Managing Agency. The Managing Agency controls the use of the container label, the database of the eligible containers, and the systems and equipment for the beverage producers. Financial information however from the producers is not made visible to the Managing Agency. Unredeemed deposits and monetary flows in Germany are controlled by the producers and retailers themselves. Producers can engage with service providers, such as data processors or waste management companies, and allow them to handle the monetary flows including unredeemed deposits. If so, producers must negotiate individually with the service providers. Unlike other schemes, the German scheme does not have a central financial clearing system<sup>607</sup>.

In Sweden, in order to be a part of a scheme, producers must register with one of the existing deposit schemes, which will then permit them to sell their products. In Finland, producers operate their own scheme for reusable glass and PET bottles<sup>608</sup>.

Under the Packaging Act of Estonia, producers are responsible for recovering and disposing of their materials that they put on the market. Producers must ensure they meet a certain recycling threshold, otherwise they pay a packaging fee. At the end of a container's life span, beverage producers must ensure that the packaging materials are recycled, composted or recovered in energy generation, providing that the packaging allows for the optimisation of energy recovery. Beverage producers can transfer the responsibility of collecting their own packaging waste to a state-accredited recovery organisation that comprises of packaging companies. As of 2011, there were four accredited packaging material recovery organisations<sup>609</sup>.

## 10.5 Communication with the Managing Agency

While in most cases beverage producers are responsible for funding schemes, they are usually managed and regulated by the Managing Agency and/or the scheme regulator. This helps ensure that they remain accountable and compliant and that support is provided where necessary.

The following sections provide case study examples of communication between the beverage producer and the Managing in Australia and the United States of America.

### 10.5.1 Australia

In New South Wales, the Managing Agency regularly publishes online articles and sends letters to first suppliers to answer common queries. For example, a letter was published online from the Chief Executive Officer (CEO) of Exchange for Change, the Managing Agency, to 'First Suppliers'. The letter explained the method for calculating each supplier's invoices through the process called the 'true up' calculation process. The letter explained the methodology and acknowledged that it may be

<sup>606</sup> Uzstato Sistemos Administratorius, 2018, Lithuania's Deposit System

<sup>607</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>608</sup> Directorate General for External Policies of the Union - Policy Department, 2011, A European Refunding Scheme For Drinks Containers.

<sup>609</sup> BottleBill.org, 2001, Estonia, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/worldwide/estonia>

difficult for suppliers to work through the process. The CEO noted that the agency was looking at introducing more information on the invoices to ease the process for suppliers. The letter also provided tables of data to help suppliers determine the accuracy of their invoices<sup>610</sup>.

In addition to communication by online letters, the Scheme Coordinator has created other avenues to simplify communication with producers. These include the below:

- An online supplier portal is available exclusively for suppliers with agreements in the scheme;
- An email address and a toll-free contact number has been created to answer supplier questions;
- A monthly newsletter is published by the Scheme Coordinator. The newsletter outlines the pricing information that the Scheme Coordinator will use to calculate the supplier's next invoice. The newsletter also explains any updates made to the system.
- A detailed overview of the supplier's invoice is provided in an email in the days following the receipt of the invoice by the supplier. The email explains the invoice calculation in detail<sup>611</sup>.

First suppliers are required to keep auditable electronic records of their supplied beverages<sup>612</sup>, and must report to the Managing Agency on the volume of their beverages by month and by material type<sup>613</sup>.

In Queensland, communication between beverage producers and the Managing Agency was initiated during the design stage of the scheme. The liaison group consisting of the retail industry and beverage manufacturers met twice during the design stage to provide feedback to the Managing Agency on the financial model. Since the operation of the scheme, the Managing Agency has been publishing bi-monthly online newsletters to inform stakeholders of updates made to the scheme<sup>614</sup>.

## 10.5.2 United States of America

In the United States of America, communication between beverage producers and managing agencies is ongoing and a regulated requirement, since beverage producers are often required to submit regular reports on their operations.

As mentioned previously, California has created a contact number specifically to address queries of container manufacturers. This role is identified as the 'CRV labelling contact'.

In Connecticut, the law states that deposit initiators must undertake quarterly reporting on account balances, credits and withdrawals, and pay outstanding balances from the special account to the state. The quarterly reports are required to detail the below:

- the special account balance at the beginning of the quarter;
- the deposits credited and refund values paid during the last quarter;
- the interest, dividends and returns received during the last quarter;
- the withdrawals, service charges and overdraft charges; and
- the balance at the close of the quarter<sup>615</sup>.

<sup>610</sup> Exchange For Change, 2018, Dear First Suppliers, available from: <https://returnandearn.org.au/wp-content/uploads/2018/05/Dear-First-Suppliers.pdf>

<sup>611</sup> Exchange for Change, date unknown, Drinks suppliers and exporters, available from: <https://returnandearn.org.au/partners/drinks-suppliers/>

<sup>612</sup> Exchange for Change, 2017, Newsletter November 2017.

<sup>613</sup> NSW EPA, date unknown, NSW first supply approach.

<sup>614</sup> Container Exchange, date unknown, Beverage manufacturers, available from: <https://www.containerexchange.com.au/industry-partners/>

<sup>615</sup> State of Connecticut Department of Energy & Environmental Protection, year unknown, Bottle Bill FAQ, available from: [https://www.ct.gov/deep/cwp/view.asp?a=2714&q=324834&depNav\\_GID=1645](https://www.ct.gov/deep/cwp/view.asp?a=2714&q=324834&depNav_GID=1645)



Quarterly reporting is also required in New York for the deposits collected and the unredeemed deposits<sup>616</sup>, and in Vermont where they are to be submitted to the Vermont Department of Taxes<sup>617</sup>. In Massachusetts, reporting is undertaken monthly by beverage producers and includes information on the deposits and refunds of that previous month. Similarly, in Michigan, beverage producers are required to report on the number of containers sold and redeemed. In Maine, the law was updated in 2019 to require deposit initiators to report on the number of beverage containers collected in the previous year<sup>618</sup>.

### 10.5.3 Europe

In Estonia, beverage producers are required to submit reports about their sales and recovery rates. The data is kept in a national database called the packaging register<sup>619</sup>. Beverage producers in other schemes around Europe are also similarly required to submit their data to the Managing Agency or to a company that forwards a summary of the data to the Managing Agency. This has also been touched upon in previous sections.

A specific role has been created in Lithuania for answering the queries of beverage producers. The role is identified as ‘Sales manager’ and their contact details are provided on the Managing Agency’s website. The contact information identifies that it is specifically for manufacturers and importers who wish to discuss contracts and labelling<sup>620</sup>.

## 10.6 The Aotearoa New Zealand Context

Beverage producers are defined as the manufacturers of the drinks that go into the containers manufactured by the container manufacturers (see Section 9 for further discussion on the container manufacturer). While there are many similarities in the roles of the beverage producer and the container manufacturer, most of the responsibility of scheme involvement often falls on beverage producers (e.g., responsible for paying the scheme deposit and scheme fee). Further, depending on the company, beverage producers and container manufacturers can be one and the same. As noted earlier in Section 10, most schemes are implemented with the intention to create producer responsibility, with the costs of running container return schemes often the responsibility of beverage producers, with consumers ultimately paying for the cost of the scheme. However, it is also important to note here that when designed well, beverage producers also experience many benefits from container return schemes, including having their costs offset by the scheme’s financial operations.

In determining the role of the beverage producer in the NZ CRS, the research suggests the following common responsibilities to be applied:

- Ensuring that eligible beverage containers are supplied to the market;
- Ensuring that the eligible containers are clearly marked and identified as part of the scheme; and
- Paying for the costs related to the supply of eligible container materials as part of the scheme (e.g., deposit and scheme fee).

<sup>616</sup> BottleBill.org, 2018, New York, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/usa/new-york>

<sup>617</sup> Vermont Agency of Natural Resources - Waste Management & Prevention Division Solid Waste Program, 2019, Bottle Bill Fact Sheet: Manufacturers

<sup>618</sup> BottleBill.org, 2018, Maine, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/usa/maine>

<sup>619</sup> BottleBill.org, 2001, Estonia, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/worldwide/estonia>

<sup>620</sup> Užstato sistemos administratorius, 2020, Contacts, available from: <https://grazintiverta.lt/en/for-business/>

Inclusion of these elements in the NZ CRS design recognises the importance of the beverage producer in the successful functioning of the scheme but also acknowledges that the beverage producer is one scheme participant within a group of participants required to ensure the successful delivery of the NZ CRS to consumers.

Further, while many global container return schemes are operated by the beverage industry, feedback received from the SDWG noted the need for balanced government appointed NZ CRS Managing Agency representation from a range of sectors, including for example, Iwi, recyclers, retailers, consumer, community and the waste sector to ensure the NZ CRS benefits from diverse governance and leadership (see Section 14 and Section 15 for further discussion).

It is also acknowledged that Aotearoa New Zealand beverage producers may also provide products to multiple global jurisdictions and where this occurs will be exempt from paying the NZ CRS scheme related fees (e.g., deposit, scheme fee). Further, it is acknowledged that several of the Australian states have existing container return schemes in place with a consistent label applied. Similarly, in other global locations where countries with a container return scheme share a land border no such shared label was identified in the research, presumably due to the country specific requirements of the respective (e.g., different legislative environment). Notwithstanding the outcomes of the research and acknowledging the feedback received from the SDWG, on balance the Project Team are of the view that the NZ CRS design should at this stage include its own unique scheme logo which may also incorporate a scheme ID, QR code or other form of scheme identification linked to fraud mitigation measures such as container verification.

Based on SDWG feedback and the outcomes of the global research, the following non-exhaustive additional design components will also apply to the Aotearoa New Zealand beverage producer:

- Responsible for paying the deposit and the scheme fee per eligible scheme container;
- Container conditions of acceptance (e.g., all eligible containers to be labelled which may include a unique scheme label, the scheme label to indicate the deposit amount and, for example, a barcode, and/or QR code, and/or security logo);
- Legislated labelling requirements including verification requirements;
- Registration of eligible scheme containers;
- Implementation of a transition period (as also noted for the retailer see Section 5 for further discussion);
- Inclusion of contractual performance indicators to support the provision of post-consumer recycled scheme material in the manufacturing of new beverage containers;
- Use of post-consumer recycled scheme material in container manufacture exempted if containers can be reused or refilled; and
- Provision of monthly sales data to track eligible scheme containers placed on to the market versus those returned to the scheme.

Further, it should be noted that defining the NZ CRS beverage producer and a detailed legal assessment will be required during the NZ CRS implementation stage to ensure all legal components (e.g., labelling requirements, export exemptions) have been addressed and accounted for in the bespoke NZ CRS legislative instrument with specific reference to the beverage producer.

## 10.7 Summary of Key Findings

The outcomes of the above research show that beverage producers are generally responsible for funding container return schemes with many beverage producers also fulfilling the role of container manufacturer. In addition, they are responsible for ensuring that eligible containers are supplied to the market, ensuring that eligible containers are clearly marked and identified as part of the scheme, and paying for the costs related to the supply of eligible containers as part of the scheme.

Beverage producers typically face the financial responsibility of funding container return schemes and may also be required to pay an additional material recycling fee on products that are not readily recycled. However, it is acknowledged that some or all of these costs may be passed through to the consumer at the point of sale. Similarly, in addition to funding the scheme, the beverage producer may also be responsible for managing and operating the scheme which may either require a deposit to be paid on all eligible containers regardless whether the containers are returned or not, or a deposit paid only on those eligible containers returned. Where the beverage producer manages and operates the container return scheme, the way in which this is achieved differs depending on which scheme model is implemented.

The following conclusions are also drawn from the research:

- Clear conditions of acceptance to be established for beverage producers (Section 10.1);
- Container labelling to be legislated and to include requirements such as a scheme logo, barcode and the deposit/refund amount (Section 10.1);
- Beverage producers to register containers with the scheme in order to sell products (Section 10.1);
- Beverage producers are commonly required to ensure that their containers are approved by the scheme Managing Agency or the regulator before being able to supply them to the market (Section 10.1);
- There was evidence found in Sweden to suggest that some beverage producers were changing their product material from PET to other plastics to avoid paying scheme costs (Section 10.1);
- Cost implications on beverage producers vary greatly depending on the different scheme designs. In general, beverage producers are commercially impacted as schemes require them to change their container designs, including labelling (Section 10.2);
- Beverage producers usually pay for the initial set-up fee, an annual fee, and a deposit for each container put on the market (Section 10.2);
- Depending on the scheme design, beverage producers may be required to pay for specific scheme components such as labelling, deposit fee and administration fees (Section 10.2);
- Beverage producers generally pay the deposit fee per container (including other scheme costs including administration fees and scheme joining fees) to the Managing Agency with funds used to finance the scheme (Section 10.2);
- The implementation of regulatory incentives may be required to ensure beverage producers supply beverages in sustainable packaging and/or in packaging that is readily recycled (Section 10.2);
- Beverage producers can be required to undertake modifications to their factories, systems and operations when changes are mandated schemes. A transition period helps to ensure that producers are given enough time to make the necessary changes to their containers to comply with regulations (Section 10.2);
- The availability of a consistent supply of material via container return schemes may support container and beverage producers to increase the use of recycled feedstock in the production of new containers and support government *ōhanga āmiomio* - circular economy initiatives (Section 10.2);
- A transition period may assist beverage producers to make the necessary change to containers in order to comply with specific regulations (Section 10.2);
- Container return schemes may create commercial tensions between beverage producers particularly where discrepancies between specific eligible and ineligible beverage types were included, for example if glass was not included in the scheme but other materials are (Section 10.2);

- The Managing Agency may specify regulations for the beverage producer to meet to ensure manufactured containers are compliant with the scheme (Section 10.3);
- A key issue generally faced by beverage producers during scheme initiation is the logistical requirement to ensure contracts and organisational management is in place (Section 10.2);
- Schemes where beverage producers sell eligible containers outside of the state/territory/country are generally eligible for a refund of scheme deposits with appropriate measures in place to manage over-claiming (Section 10.2);
- Some global schemes offer interest free loans to the scheme in the design and initiation stages to keep costs down for producers and consumers (Section 10.2);
- Where unredeemed/unclaimed deposits were generated due to the scheme design, specific scheme and/or legislated requirements were established to manage the funds (Section 10.2);
- Across many container return schemes, the Managing Agency provide beverage producers with information and tools to ensure clarity of roles and responsibilities, including registration of containers (Section 10.4);
- If identified as a first supplier (i.e., New South Wales container return scheme), a producer has a legal obligation to participate and fund the scheme (Section 10.4);
- Generally, it is the legal obligation of the scheme Managing Agency to ensure that first suppliers are registered and compliant (Section 10.4);
- Most global container return schemes require producers to ensure that eligible scheme containers contain, for example, the scheme refund marking, barcode requirements and any other specific scheme requirement (Section 10.4);
- In most global container return schemes, beverage producers are responsible for funding the scheme and are usually managed and regulated by the scheme Managing Agency. This helps ensure that producers remain accountable and compliant and that support (e.g., scheme website portals, scheme information, contact phone numbers) is provided where necessary (Section 10.5)

As a result, the beverage producer is a key participant in the NZ CRS whilst supporting broader ōhanga āmiomio - circular economy principles and encouraging, where possible, a closed loop material system. Therefore, the design of the NZ CRS will determine which beverage producers will financially pay for scheme in proportion to the number and type of container materials sold to consumers.

## 10.8 Summary of Feedback Received

The following table provides a high-level summary of the feedback received from the Scheme Design Working Group (SDWG) members after reviewing the section information. As many suggestions as possible have been incorporated but the NZ CRS Project Team acknowledge that the wide range of views expressed meant not every edit could be accepted. The NZ CRS Project Team is grateful for those who have provided feedback and where possible these have been used to provide further clarity and context throughout this section and to identify areas requiring further assessment during the NZ CRS implementation stage (Section 17).

The Beverage Producer Feedback – High-Level Summary	
<b>Areas for further Investigation</b>	
The process for billing manufacturers, and if it will be arrears or in advance (see Section 11 for further discussion).	Clarify on the types of fees and expected costs that beverage producers will have to pay (see Section 11 for further discussion).

<b>The Beverage Producer Feedback – High-Level Summary</b>	
The capability of producers using local post-consumer recycled materials, including consideration of global commodity markets, price impacts on consumers and availability of local material (see Section 12, Section 14 and Section 17 for further discussion).	The impacts of mandated recycled content on local markets, and on international trade markets (see Section 12 and Section 17 for further discussion).
The financial and wider impacts of label changes on local markets, and on international and trade markets, with consideration of international trade obligations (see Section 12, Section 13 and Section 17 for further discussion).	Guidance to be provided for producers on designing for recyclability (see Section 12 and Section 17 for further discussion).
Financial impacts on beverage producers to show that not all costs are passed on to consumers (see Section 11 and Section 17 for further discussion).	Product price elasticity and impacts on smaller producers (see Section 11 and Section 17 for further discussion).
Consumers' willingness to pay for fees such as the handling fee and attitudes towards pricing dynamics (see Section 11 for further discussion).	How export exemptions will work (see Section 17 for further discussion).
The length and operational details of the transition period, and the impact on small producers (see Section 17 for further discussion).	Management of the confidentiality of commercial and sales information of beverage producers (see Section 14 for further discussion).
Online shopping, home deliveries and management and registration for imported containers (see Section 17 for further discussion).	The criteria for applying the Advanced Material Recycling Fee (AMRF) and how it is calculated (see Section 11 for further discussion).
Incentives that reward producers for high rates of collection and beneficial reuse (see Section 12 for further discussion).	
<b>Opposing Views</b>	
<p>The Advanced Material Recycling Fee (AMRF):</p> <ul style="list-style-type: none"> <li>Members against request that impacts on producers are further investigated, including the potential reduction of resources for recycling and the benefits of hard to recycle products such as LPBs being cheaper to transport.</li> <li>Members in support state that the AMRF will drive industry to use materials that are less harmful, can be recycled and have end markets.</li> </ul>	<p>Passing all fees on to consumers:</p> <ul style="list-style-type: none"> <li>Members in support state that all costs must be recovered by consumers and suggest legislating passing the handling fee and deposit on to the consumer to prevent retailers trying to get producers to discount these fees.</li> <li>Members against state that fees should be lowered for consumers to keep beverage prices down and not impact sales. Some members suggest refunding only part of the</li> </ul>

<b>The Beverage Producer Feedback – High-Level Summary</b>	
<ul style="list-style-type: none"> <li>Some members have proposed other incentives and fee mechanisms to be considered such as Differential Management Fees or a fee to be applied to producers who sell beverages in hard to recycle materials based on what is collected through the scheme.</li> </ul>	deposit so that consumers help fund the scheme.
<b>Do not Support the Following</b>	
The suggested idea that beverage producers can pass all scheme costs on to retailers and consumers. Beverage producers and retailers absorb much of the costs.	
<b>Support the Following</b>	
Beverage producers to be responsible for paying for the full life cycle of materials.	A transition period to reduce cost burden on industry.
The Managing Agency to set all scheme costs.	Beverage producers to register eligible containers with the scheme.
Beverage producers to report data to the Managing Agency, however with consideration of the financial and commercial confidentiality of producers.	A requirement that eligible containers cannot contain rings, caps, seals and ring-pull lids, to avoid creating another stream of litter.
Not charging manufacturers initial joining and product registration fees.	Clear conditions of acceptance for eligible containers and legislating labelling requirements.
<b>Additional Design Considerations</b>	
Labelling to be aligned with Australia, noting free trade agreements with Australia and impact on producers who supply to both markets.	Scheme logo to be a kiwi-Māori influenced logo design.
Fees set by the Managing Agency to be consolidated into a single charge, differentiated by material type.	Beverage producers' payments to be in arrears, with initial funding provided by Government.
Beverage producers to be consulted about label changes.	

## 10.9 Component(s) to be Included in the New Zealand Container Return Scheme Design

Taking the above key findings into account including feedback from stakeholders involved in the NZ CRS design, the Project Team are of the view that the following components will be included in the NZ CRS design.

The Managing Agency will give effect to the following:

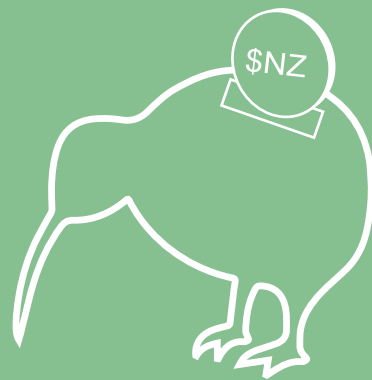
- Stipulate clear conditions of acceptance criteria for beverage producers;
  - The reason why this is good for Aotearoa New Zealand is that the Managing Agency is driven to encourage and promote Extended Producer Responsibility by putting in place measures to influence material type whilst also ensuring consistent scheme acceptance criteria are met.
- Recommend appropriate container labelling requirements to be legislated and to include requirements for scheme verification such as a scheme logo, barcode and deposit amount.
  - The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
- Ensure all eligible beverage containers will be registered with the Managing Agency.
  - The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers (i.e., both imported and locally produced) and to minimise scheme fraud.
- Undertake regular reviews of beverage containers and materials by undertaking huringa mataora – life-cycle analyses of these in keeping with the economic, environmental, social and cultural outcomes of the NZ CRS design. Reviews shall be undertaken at a frequency of at least once per three years.
  - The benefit to Aotearoa New Zealand is that the huringa mataora – life-cycle analysis can assess the beverage production process including the production and/or consumption of resources including knowledge of the energy consumption and carbon emissions associated, and where appropriate, the scheme can through appropriate processes and procedures seek to improve systems and processes.
- Implementation of a transition period for beverage producers to make the necessary changes to their containers in order to comply with the regulations. The implementation period shall not be less than 9-months.
  - The benefit of a transition period to Aotearoa New Zealand container manufacturers is to ensure manufacturers are provided sufficient time to adjust to scheme requirements and establish new processes where needed.
- Ensure contractual arrangements with beverage producers support the provision of minimum post-consumer recycled scheme material content in the manufacturing of new beverage containers.
  - The reason why this is good for Aotearoa New Zealand is that the Managing Agency will encourage and promote Extended Producer Responsibility by requiring container manufacturers to use recycled scheme material in the production of new containers in keeping with best international practice.
- Requirement for beverage producers to register eligible containers with the scheme in order to supply containers to the Aotearoa New Zealand market.
  - The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
- Determine the scheme costs and appropriate cost recovery fees including but not limited to a product registration fee and disposal fee. Provide appropriate incentives to promote and encourage the use of post-consumer recycled scheme material in the manufacture of new containers.
  - The reason why this is good for Aotearoa New Zealand is that the Managing Agency will encourage and promote Extended Producer Responsibility through the application of fees including an Advanced Material Recycling Fee encouraging container manufacturers to use recycled scheme material in the production of new containers.

- Provision of information to clearly set out any specific labelling requirements to help ensure beverage producers are compliant with scheme requirements.
  - The benefit of this approach to Aotearoa New Zealand is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
- Require beverage producers to provide the Managing Agency with monthly sales data (e.g., sales volumes) to track scheme containers placed on to the market and those eligible scheme containers returned.
  - The benefit of this approach to Aotearoa New Zealand is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
- Take all necessary steps and actions as required to ensure compliance by all beverage producers with the scheme requirements.
  - The benefit of this approach is primarily driven by the Managing Agency ensuring beverage producers comply with all scheme requirements including those as specified in the bespoke NZ CRS legislative instrument. This will ensure data transparency supporting a cost efficient and effective scheme is provided to consumers.



## SECTION 11: SCHEME FINANCIALS

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## Section 11 Scheme Financials

To ensure the successful operation of a container return scheme it is important that the costs associated with scheme operations are, as a minimum, covered by scheme revenues which is particularly true of 'not-for-profit' schemes. To assist in this, several factors influence scheme financials, including:

- Upfront cash requirements to cover container deposit refunds;
- The number of, and costs incurred by beverage producers;
- Cash flows owing to seasonal fluctuations of containers (e.g., summer consumption, economic fluctuations) and the funds received from beverage producers as well as unredeemed deposits; and
- The influence of deposit value on container return rates and unredeemed deposits.

Similarly, the design of a scheme and whether the beverage producer pays a deposit for all containers sold to the market regardless whether eligible containers are returned or not (i.e., deposit model), or required to only pay a deposit on those eligible containers that are returned (i.e., refund model) will have a significant influence on the scheme financials and scheme performance (i.e., return rates). The intent of Table 16 below is to provide a high-level overview of several key differences between the deposit model and refund model as they relate to container return schemes.

**Table 16: Scheme financials as per the European and Canadian container deposit and refund scheme model<sup>621</sup>**

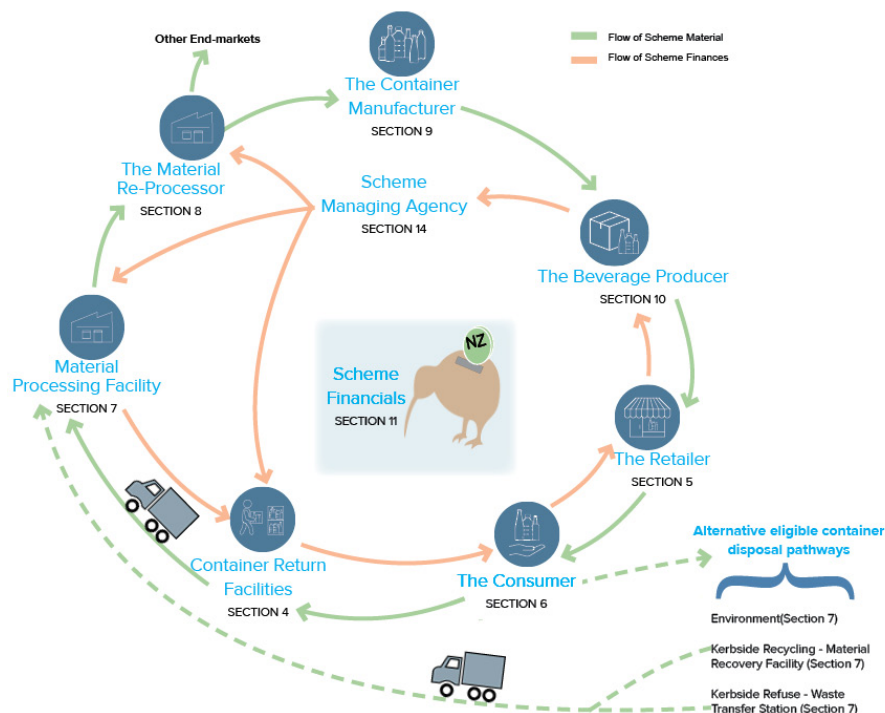
Deposit Container Return Scheme	Refund Container Deposit Scheme
Consumer pays deposit at point of sale (i.e., retailer) and gets deposit back at a container return facility	Consumer pays deposit at point of sale (i.e., retailer) and gets deposit back at a container return facility
Full deposit and scheme fee paid by the beverage producer on each eligible scheme container sold to market regardless if the container is returned or not. If only 50% of containers are returned by consumers then the Managing Agency will retain the unredeemed deposit and scheme fees paid by the beverage producer.	Deposit and scheme fee paid by the beverage producer on each eligible scheme container sold to market but amount paid is only in proportion to the eligible scheme containers returned. If 50% of containers are returned by consumers then only 50% of the deposit and scheme fee will be paid on each eligible container sold to market.
Collection of unredeemed/unclaimed deposits used to support the cost of scheme operations and support environment, social and community-based initiatives	No unredeemed/unclaimed deposits available to support the cost of scheme operations and support environment, social and community-based initiatives
Ability to claim interest on accrued unredeemed/unclaimed deposits	Not applicable
The more successful the scheme (i.e., higher container return rates) the higher the handling fees to beverage producers (to off-set reduced income from unredeemed deposits and interest)*	The more successful the scheme (i.e., higher container return rates) the higher the overall scheme cost to beverage producers (deposit and handling fee)*

\*NOTE: it is anticipated that all costs associated with the scheme are ultimately paid for by the consumer and not the beverage producer.

<sup>621</sup> Happy Returns: A proposed model for a Container Deposit Scheme (CDS) for New Zealand, 2019

Additionally, the schemes design and associated financial arrangement will also influence elements including return rates, the ability for the scheme to invest funds into community, social, environmental initiatives and/or consumer engagement; elements which are discussed in further detail in the following sections.

As seen in previous sections, the following schematic illustrates the broad mechanism of a NZ CRS design, which includes the roles and relationships of the respective scheme participants, including the container manufacturer, and the broad movement of the scheme financials (e.g., the deposit, scheme fee, administration fees and the Advanced Material Recycling Fee). As with all container return schemes, the financial arrangement (e.g., deposit, scheme fee, Advanced Material Recycling Fee, unredeemed/unclaimed deposits) influences the commercial drivers of the Managing Agency to lift scheme performance and return rates.



For the purpose of clarity and as illustrated in the above NZ CRS scheme schematic, there are a range of scheme participants involved in the NZ CRS, including:

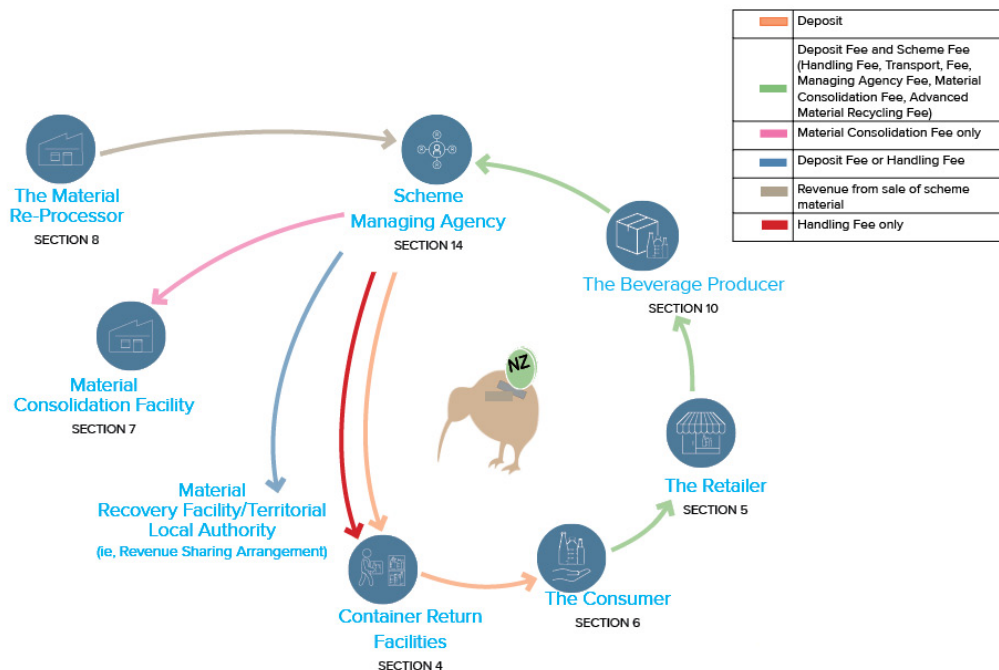
- The Consumer (refer to Section 6);
- Container Return Facilities (refer to Section 4);
- The Retailer (refer to Section 5);
- Material Processing Facilities (refer Section 7);
- The Material Re-Processor (refer to Section 8);
- The Container Manufacturer (refer to Section 9);
- The Beverage Producer (refer to Section 10); and
- The scheme Managing Agency (see Section 14).

Each of the above listed scheme participants are actively involved in the scheme financials with varying roles and responsibilities depending on the activity and/or interaction (e.g., provision of collection and/or processing capabilities) provided to the NZ CRS.

For clarity, the NZ CRS scheme financial flow comprises the following three (3) key components:

- Deposit fee
  - A deposit fee is fully refunded to the consumer when an eligible scheme container is returned to a container return facility.
- Scheme fee
  - A scheme fee covers the costs of recycling an average container through the NZ CRS, including the costs of the container return facility (see Section 4), transport, scheme Material Consolidation Facility (see Section 7) and the scheme Managing Agency (see Section 14).
- An Advanced Material Recycling Fee
  - An additional fee adjustment (positive or negative) to reflect the cost or value of recycling a given material. It may also incentivise a shift to materials which are easier and more cost effective to recycle.

As such, each scheme participant interacts with the financial scheme components differently and may either simply receive the deposit refund for the return of eligible scheme containers (i.e., the consumer), pay the deposit, scheme fee, Advanced Material Recycling Fee to the scheme Managing Agency (i.e., the beverage producer) or be paid a handling fee by the scheme Managing Agency (e.g., the container return facility). The below schematic illustrates the high-level formal financial flows of the NZ CRS by focussing on the scheme participants. It is though acknowledged that there may also be informal financial flows, for example, where individuals and/or organisations collect eligible scheme containers on behalf of others which are not illustrated on the below schematic.



## 11.1 Container Return Scheme Legislation and Regulations

The role of Government in the design and implementation of container return schemes is determined by country specific legislation which in turn impacts on the performance and success of a scheme. As reported in Section 2 there is now growing awareness and recognition of the need to transition from a linear (take-make-dispose) economy to a circular (make-use-return) economy - ōhanga āmiomio. This is reinforced by Te Ao Māori, reflected in Tiriti o Waitangi principles, which similarly promotes responsible

stewardship of the whenua, including valuing resources, and thereby respecting the mauri of Papatūānuku. Further, the New Zealand Government has established and enacted several key legislative documents that set the requirements for waste minimisation and management. In addition, the New Zealand Government has ratified several international agreements to manage Aotearoa New Zealand's impact on the global waste sector. While it is not the intent of this section to re-cap the information provided in Section 2, it is important to note here that the implementation of a NZ CRS will need to take into account the available Aotearoa New Zealand legislation and regulations to influence the shape of the NZ CRS and any new legislative instruments that may be required. Additionally, under a mandated approach to the establishment of Kaitiakitanga Whakanaonga - Product Stewardship schemes (including a NZ CRS), the development of a new legislative instrument is required for specific products or product categories (e.g., Priority Product Guidelines)<sup>622</sup>. Under a mandatory system (i.e., NZ CRS), the New Zealand Government would formally require oversight of the development of the system, as well as the means to monitor and enforce compliance (see Section 15 for further discussion).

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*The role of Government in the design and implementation of container return schemes is significantly influenced by country specific legislation which in turn impacts on the performance and success of a scheme*

*Under a mandated approach to the establishment of product stewardship schemes (including a NZ CRS), the development of new legislation and regulations is required for specific products or product categories (e.g., Priority Product Guidelines)*

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In addition to Government oversight, the following non-exhaustive list of areas have been included in legislation from global container return schemes and which might be considered in the establishment of a NZ CRS legislative instrument:

- Prescribed targets for collection and recovery (e.g., eligible container return rate);
- Flexibility to increase the deposit level;
- Flexibility to expand the scope of containers;
- Consumer convenience;
- Managing Agency and financial transparency;
- Producer responsibilities and payments;
- Retailer responsibilities and payments;
- Material recyclability, processing and closed-loop systems;
- MRF scheme participation and revenue sharing arrangements;
- Scheme financials including handling fees and Advanced Material Recycling Fee; and
- Scheme target and performance indicators.

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*The majority of well performing European countries employing a container return scheme (i.e., return rates of >85%), have set a deposit value of the equivalent NZD of approximately 30-cents per eligible container*

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## 11.2 The Deposit

### 11.2.1 Deposit Amount

In most global countries with a container return scheme in place, the value of the deposit varies depending on the type and/or size of the container. Appendix A tabulates a wide range of global schemes and the associated deposits and should be referred to for further specific scheme related information. Broadly, many of the well performing European countries employing a container return scheme (i.e., return rates of >85%), have set a deposit value of the equivalent NZD of approximately 30-cents per eligible container with the recently commissioned Scottish scheme setting a deposit value of approximately NZD40-cents per eligible container. In comparison, the Australian State/Territory schemes have a consistent deposit level of AUD10-cents per eligible container. It is also worth noting here that the South Australian scheme when originally implemented in 1977 had a deposit level of

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<sup>622</sup> <https://www.mfe.govt.nz/publications/waste/product-stewardship-and-water-efficiency-labelling/4-policy-approaches-product>

AUD5-cents but increased this to AUD10-cents several years ago and has been used by all Australian schemes as the base deposit level (see Section 11.3 for further discussion regarding scheme deposit level and consumer behaviour and Section 11.4 for further discussion regarding scheme deposit level and the scheme return rate). Interestingly, the results of a consumer survey undertaken by the Western Australian Government to inform the design of the Western Australian container return scheme reported that of over half of the submissions received noted several key items:

- Some respondents noted consideration to be given to a deposit amount higher than AUD10-cents as it may be too low to incentivise behaviour change, while others supported AUD10-cents as it aligned to other Australian schemes;
- Consideration to be given to different deposits amounts for different materials, with a higher deposit for glass materials due to broken glass presenting a hazard to cyclists and pedestrians; and
- The suggestion that the deposit amount be reviewed after two (2) years or if container return rates fall below a specified threshold for consecutive years.

The Government of Western Australia has decided that the deposit amount will be AUD10-cents across all containers to align with other Australian schemes with any amendment to be coordinated with other states and territories to maintain scheme alignment<sup>623</sup>.

Where other schemes have increased deposit levels this has been undertaken through an assessment of a variety of factors including stakeholder consultation, knowledge of return rates and implementing enabling legislation to facilitate an increased deposit level. Further, a flat rate deposit such as seen in Australian schemes and other global schemes provides equal incentive to return all containers, ensures that the system is fair to all producers, and is simpler to administer<sup>624</sup>.

While there is some discussion in the literature suggesting a direct and causative link between the value of the deposit and scheme return rates, there are many other inter-related factors (e.g., consumer behaviour, access to collection facilities, scheme education and engagement including awareness of the scheme kaupapa - purpose) all of which exert their own influence on how effective the scheme is measured based on return rates. The literature available from European container return scheme suggests container return schemes with a high degree of convenience for consumers to return eligible containers have return rates greater than 85% (refer Section 4 for further information). Therefore, the relationship between deposit value and return rates should not be concluded without a full and thorough understanding of relationship between all scheme components. To determine the deposit value, several matters need to be considered including, but not limited to:

- Consumer incentivisation – the value of the deposit should provide the consumer with sufficient incentive to collect and return eligible scheme containers (discussed further in Section 11.3 and Section 11.4); and
- Cost of container production versus the deposit value.

Additionally, the value of the deposit and any associated scheme related fees is also influenced by the design of the scheme, including whether the responsibility of paying for the scheme sits with the beverage producer or with the consumer (e.g., pass through of scheme costs) with variations of these occurring across the global container return. Kaitiakitanga whakanaonga - Product Stewardship principles and the relationship with container return schemes will be further discussed in Section 12.

<sup>623</sup> Western Australia Container Deposit Scheme Consultation Summary, 2018 Government of Western Australia Department of Water and Environmental Regulation

<sup>624</sup> How a Deposit Return System will complement Ontario's Blue Box Program and Enhance the Circular Economy, 2019

The following sections provide case study examples of how the deposit is incorporated into the design and the relationship with the beverage producer and consumer.

### 11.2.1.1 Canadian Case Study

Where container return schemes are implemented in Canada, deposits are paid on beverage containers at the point of purchase with the consumer having visibility on the deposit amount which is printed on the receipt.

Generally, the consumer will receive the complete refund if the container is returned to a collection facility, however, in some Canadian schemes, the depots may keep part of the deposit as their handling fee which means the customer receives less refund per container. For example, in the Yukon scheme, Tetra Paks 1L and greater have an associated CAD\$0.35 deposit value of which the depot takes CAD\$0.10, leaving the customer with a refund per container of CAD\$0.25<sup>625</sup>.

Across the global container return schemes, it is generally the beverage producer that initially fronts the cost of the scheme costs, however in Canada, some schemes have been developed to specifically minimise the financial obligation of beverage producers and rather pass these costs on to the consumer<sup>626</sup>. As has been reported, the Canadian schemes place the balance of financial responsibility for the schemes on five (5) different stakeholder groups, each of which fund the scheme. These stakeholders as reported are:

- Wasting consumers (those consumers who do not return their empty eligible containers for refund and recycling);
- Recycling consumers (those consumers who return their empty eligible containers for refund and recycling);
- Municipal governments (responsible for recycling, litter management);
- The beverage industry; and
- Provincial governments or liquor boards.

In Canadian schemes, the following range of fees are charged on a per container basis to consumers to fund the various collection systems:

- Container Recycling Fee
  - This fee depends on the value of the material being collected and the collection rate for a container (i.e., high collection rates lead to less unredeemed deposits therefore needing a higher container recycling fee. The fee is paid by beverage distributors and passed on to consumers. Lower collection rates lead to greater unredeemed deposits therefore needing a lower container recycling fee). The fees reported in British Columbia range from zero to CAD\$0.20 per container to zero to CAD\$1.10 per container in Alberta.
- Environmental handling charge
  - This fee is charged on all non-refillable beverage containers with funds collected by the provincial government in Saskatchewan to pay for the scheme. The fee is reported to range from CAD\$0.03 to CAD\$0.07 per container sold with funds primarily used to fund the scheme with excess put into provincial general revenues.
- The Half-back system, recycling fund fee and container handling fee

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*A flat rate deposit provides equal incentive to return all containers, ensuring that the system is fair to all producers and is simpler to administer*

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<sup>625</sup> Who Pays What: An analysis of beverage container collection and costs in Canada, 2012

<sup>626</sup> Who Pays What: An analysis of beverage container collection and costs in Canada, 2012



- These systems are used in a number of Canadian schemes including New Brunswick and Nova Scotia and are based on the principle that the consumer is refunded half or a portion of the deposit paid on eligible single-use containers and the other half retained to support recycling initiatives. As reported for the environmental handling charge, the fee is used to fund the scheme with excess funds used to subsidise the municipal kerbside recycling programme and other provincial environmental initiatives.

The application of these fees varies depending on the specific Canadian scheme, but all the above fees suggest that the consumer is paying either a portion of, or the whole cost of operating the scheme.

## 11.2.2 Deposit Collection Method

The mechanism by which a container return scheme is operated is dependent on how the scheme financial system is set-up and the schemes ability to influence eligible container return rates. Generally, there are two (2) predominant models implemented, comprising:

1. A deposit model; or
2. A refund model.

A deposit model is based on the beverage producer paying the relevant deposit on each container sold to market, regardless whether the consumer returns the container or not for a refund. Under a deposit model, the Managing Agency retains any unredeemed/unclaimed deposits, interest accrued on deposit funds and revenue from the sale of scheme material to help fund the scheme which helps to reduce any final administrative costs charged to the beverage producer<sup>627, 628, 629</sup>.

In comparison, a refund model is based on the beverage producer paying the relevant deposit to the agency responsible for the scheme operation (e.g., scheme Managing Agency) on each container sold to market. However, under a refund model the beverage producer only pays in proportion to the actual number of containers returned, with no unredeemed/unclaimed deposits available to the scheme Managing Agency to reduce scheme costs. Consequently, and as has been reported, the scheme costs to beverage producers is generally lower if the return rate for eligible containers is also low<sup>630, 631, 632</sup>.

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*The mechanism by which a container return scheme is operated is dependent on how the scheme financial system is set-up and the schemes ability to influence eligible container return rates. Generally, there are two (2) predominant models implemented, comprising a redemption model or a deposit model*

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The following case studies provide examples of schemes operating under the refund and deposit models and detail the associated scheme financial arrangements.

### 11.2.2.1 European Deposit Model Case Study

Across several high performing European (e.g., Denmark, Scandinavia) and several Canadian province container return schemes, the general design follows the addition of a deposit to the cost of each beverage purchased by the distributor and on sold by the retailer to the customer at the point of purchase. The beverage producer/importer pays the deposit per container sold into a central scheme

<sup>627</sup> Happy Returns: A Proposed Model for a Container Deposit Scheme (CDS) for New Zealand, 2019

<sup>628</sup> Options and Feasibility of a European Refund System for Metal Beverage Cans, 2011

<sup>629</sup> Best Practice International Packaging Approaches, 2011, Martin Stewardship and Management Strategies Pty Ltd

<sup>630</sup> Happy Returns: A Proposed Model for a Container Deposit Scheme (CDS) for New Zealand, 2019

<sup>631</sup> <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/return-and-earn/how-return-and-earn-works/scheme-financial-structure>

<sup>632</sup> Independent Pricing and Regulatory Tribunal. New South Wales Container Deposit Scheme Monitoring the impacts on container beverage prices and competition, 2018

system, which funds the reimbursement to retailers (i.e., European schemes predominantly use a return-to-retail model) of any deposits paid back to consumers for eligible containers. Any unredeemed/unclaimed deposits stay in the central scheme system which can be used to support scheme costs (including helping to lower handling fees) of the scheme and in so doing helps to reduce the revenue needed to be raised from administration fees<sup>633, 634</sup>.

The central scheme system also pays a handling fee to the retailer for each eligible container they take back from the customer. The handling fee, as in all global container schemes, is used to compensate the retailer for the time taken to receive, collect and process the deposit refund to the customer, and for the loss of retailer space needed for storage of containers or the RVM. However, across many European container return schemes, the handling fee follows a differential rate depending on whether the return method is automated (e.g., RVM) or manual (e.g., direct handling and processing) (see Section 11.6 for further discussion on differential handling fee rates).

In addition to the deposit and handling fee, beverage producers are also required to pay:

- A one-off fee which is used to set-up the deposit refund system; as well as
- An ongoing administration fee paid on each container (i.e., the balance of income from material revenues and unclaimed deposits against the cost of collection, transport, processing, administration and handling fees = administration fee guarantees the system operates in a cost neutral manner).

Within the broader container deposit schemes including those noted above from Denmark, Scandinavia and several Canadian provinces, there are a range of scheme costs which are incurred by beverage producers (e.g., deposit, container labelling), retailers (e.g., provision of RVMs for eligible container returns) and the deposit scheme (e.g., scheme operational costs). In addition to scheme costs, income generated from the sale of scheme material may offset some scheme costs such as processing of material. Table 17 provides an overview of the financial payments in the European and Canadian deposit schemes including whether the scheme costs are considered an income or expense<sup>635, 636</sup>.

**Table 17: Scheme financials as per the European and Canadian container deposit scheme model<sup>637</sup>**

	Payment	Description
<b>Expense</b>	Retailer handling fees	In Denmark, Sweden, Finland and Estonia, retailers are compensated per container they handle
	Collection/Logistics costs	Cost of operating the collection service and preparing the recycle for sale
	Counting centre costs	Cost of operating the counting centre, including buildings, plant, operating costs and labour
	Deposits paid to customers	Deposits redeemed by consumers from the collection points (retailers) – paid by the DRS to the retailers, per returned container

<sup>633</sup> Options and Feasibility of a European Refund System for Metal Beverage Cans, 2011

<sup>634</sup> Best Practice International Packaging Approaches, 2011, Martin Stewardship and Management Strategies Pty Ltd

<sup>635</sup> Options and Feasibility of a European Refund System for Metal Beverage Cans, 2011

<sup>636</sup> Best Practice International Packaging Approaches, 2011, Martin Stewardship and Management Strategies Pty Ltd

<sup>637</sup> Options and Feasibility of a European Refund System for Metal Beverage Cans, 2011

	Payment	Description
Income	Deposits paid by producers	Container deposit paid per container put on the market
	Sale of recycle	Income from the sale of the processed recycle
	Producer fees (the difference between all of the expenses and income payments in order for the scheme finances to balance)	This may include an initial set up fee, an annual fee per producer, and a fee per container

### 11.2.2.2 New South Wales Refund Model Case Study

Across the global container return schemes, it is commonly the beverage producers that pay the full costs of a scheme through an extended producer responsibility model. This is no different in New South Wales where beverage producers pay all costs of the scheme including, refunds paid to the community for containers returned through collection points, MRF/council refunds (i.e., eligible containers collected via kerbside recycling collections) and scheme administration/operating costs (e.g., handling fees).

In New South Wales, beverage suppliers identified as first suppliers are required to pay contributions based on a fixed price per material type to fund the management, administration and operation of the scheme<sup>638</sup>. Funds collected from suppliers can only be used by the Managing Agency for container refunds and the costs of operating the scheme<sup>639</sup>. When the scheme first started, it required an upfront payment by first suppliers to ensure that scheme costs were covered in the first period. The payments were adjusted in the next month's payments based on the refund rates of the previous month. Payments in advance have been used by multiple schemes to ensure enough liquidity to support the operation of the scheme. It has been said that this caused cash flow problems to smaller producers at the start of the scheme in New South Wales and led to the state government needing to provide loans to impacted manufacturers<sup>640</sup>. This payment system has since been changed to a payment in arrears system, where first suppliers provide their sales data at the end of every month and must pay within the next month. In the first month of the operation of the scheme, the Managing Agency invoiced AUD\$52 million to first suppliers. Note: To assist small beverage producers with managing the cash-flow impact of the Queensland container return scheme, arrangements exist within the Queensland scheme for quarterly payments to be made vs monthly.

First suppliers can pass the scheme costs on to retailers. Retailers may then similarly pass the costs on to their consumers. The New South Wales scheme is said to be designed using the existing market forces to control prices and ensure that there is no profiteering from the scheme.

In the first year of the scheme's operation, the Independent Pricing and Regulatory Tribunal (IPART) undertook a study to assess the impact of the scheme on different parties such as beverage producers. IPART reported that in the first year of operation, the prices of eligible container beverages increased by an average of AUD7.7cents per container. The direct cost of the scheme was on average AUD9.3cents per container. This was said to be consistent with or even less than the direct cost of the scheme. Hence it was indicated that beverage suppliers were, at least at this stage of the

<sup>638</sup> <https://www.exchangeforchange.com.au/schemes/how-the-nsw-return-and-earn-scheme-works.html>

<sup>639</sup> NSW Department of Planning, Industry & Environment, 2019, NSW Container Deposit Scheme - Frequently asked questions.

<sup>640</sup> Marsden Jacob Associates, 2018, A Model Framework for Container Refund Scheme in Tasmania.

implementation of the container return scheme, absorbing some of the costs of the scheme rather than passing them on to retailers and/or consumers<sup>641</sup>.

Under the New South Wales model, two (2) agencies have been established with complimentary but distinctly different functions. The first includes the establishment of a Scheme Coordinator, Exchange for Change, put in place to provide financial scheme management which includes the following financial responsibilities:

- Collection of fees from beverage producers;
- Payment of refunds to collection points via the Network Operator (TOMRA Cleanaway);
- Direct payment of refunds to MRFs; and
- Payment of a monthly scheme compliance fee to the New South Wales Environment Protection Authority.

In addition to above financial responsibilities, Exchange for Change is reported to receive a fixed rate Scheme Coordinator fee, agreed by and paid for, by the New South Wales Environment Protection Authority through the contract process. However, no further information was available on the frequency of payment or the value of this fee. As will be discussed below, the Scheme Coordinator does not manage an unredeemed/unclaimed deposit fund which is common across other global container return schemes as the New South Wales scheme is based on beverage producers only paying deposits on containers returned compared to paying deposits on all containers produced. However, as with other global schemes, Exchange for Change is responsible for scheme marketing and communication as well as providing auditing functions<sup>642, 643</sup>.

The second agency includes the establishment of a Network Operator (TOMRA Cleanaway) responsible for:

- Running the network of scheme container return locations; as well as
- Providing the centralised point at which material collected from across the return locations is received and processed (i.e., separated and baled) the sent to on to material re-processors (see Section 7 for further information) for further processing.

In order to collect the containers from the network of return locations, process the materials in a centralised facility and transport the containers to materials re-processors, the Network Operator receives a fortnightly fee (which includes a handling fee), paid for by the Scheme Operator. Unfortunately, while no further detail was available indicating the cost split, it was reported that the fee enables the Network Operator to provide a float to 'over the counter' and collection depots so that customers can be paid the refund on returned eligible containers<sup>644</sup>.

A similar advance invoice process is applied to scheme eligible material collected through kerbside collections and processed by MRFs however the reconciliation period is quarterly not monthly. It is probable the difference in invoicing timeframes accounts for the financial risk profiles attributed to smaller organisations and the need for regular cash-flow compared to larger organisations. Also, under this later arrangement with MRFs, the refund is paid to the MRF which then shares the refund with the appropriate local council with which they have a refund sharing arrangement (see Section 7.6.1.2 for further information). This means that beverage producers in the New South Wales scheme only pay for

<sup>641</sup> NSW Department of Planning, Industry & Environment, 2019, NSW Container Deposit Scheme - Frequently asked questions.

<sup>642</sup> <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/return-and-earn/how-return-and-earn-works/scheme-financial-structure>

<sup>643</sup> Independent Pricing and Regulatory Tribunal. New South Wales Container Deposit Scheme Monitoring the impacts on container beverage prices and competition, 2018

<sup>644</sup> <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/return-and-earn/how-return-and-earn-works/scheme-financial-structure>

those containers actually collected and refunds paid through the scheme. As will be discussed further in Section 11.8, under this scheme model there is no amount of unredeemed/unclaimed deposits which may be used for supplementing the scheme operating costs (e.g., reduced administration or handling fees paid by the beverage producer) or used to support community environmental initiatives.

Once the consumer returns the empty eligible container to one of the schemes return locations, the appropriate refund is paid by the collection point operator (i.e., AUD10-cents per eligible container). However, in order to pay the consumer, the approved collection point operator must have access to funds to complete this transaction and does so by accessing a float provided by the Network Operator (TOMRA Cleanaway – responsible for running the series of collection points), and in addition, receive from TOMRA Cleanaway a handling fee to cover the cost of providing the service<sup>645, 646</sup>.

In comparison, New South Wales MRFs are not considered part of the scheme network of collection facilities as they do not act as a customer return location, only as a method of processing eligible scheme containers collected via kerbside collections. In this case, MRFs claim refunds from the Scheme Coordinator (i.e., Exchange for Change – agency responsible for managing scheme finances) directly not the Network Operator and do so on a quarterly basis (NOTE: no handling fee is paid to the MRF as they are not part of the network of collection points). As was discussed in Section 7, the refund amount to be claimed is based on the MRF undertaking approved audits (as per the MRF protocol requirements) to validate the containers per material stream; therefore, the refund received by a MRF excludes any audit cost. Unlike the Danish scheme, the New South Wales MRFs retain ownership of the value of the sale of scheme material as the material was collected via existing local Council kerbside recycling contracts.

Lastly, as discussed above, the New South Wales Environment Protection Authority receives a scheme compliance fee from the Scheme Coordinator which ensures that Exchange for Change captures all eligible containers whilst providing a compliance function whereby all collection points are providing the correct deposit amount to customers. Additionally, as discussed in Section 10, the New South Wales Environment Protection Authority receives a one-off bottle registration fee from beverage producers for each scheme eligible beverage container<sup>647</sup>.

As previously stated, the other Australian states place the responsibility of funding the scheme on beverage producers. In Queensland, beverage producers pay for each eligible container supplied to the state market<sup>648</sup>. Producers are charged in arrears on their actual sales so that they do not pay for unredeemed containers<sup>649</sup>.

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*Cash is commonly provided as a customer refund method in manual collection depots compared to automated collection points such as Reverse Vending Machines (RVMs) due to security risks such as RVM vandalism*

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### 11.2.3 Deposit Delivery Method

The selection and implementation of scheme container return facilities has an influence on the type and number of options available to a consumer in order to receive the appropriate eligible container refund. For example, as discussed in Section 4, schemes that employ manual collection facilities (e.g., depots, over-the-counter, container bag-drop or mobile/pop-up facilities) will typically provide refunds in cash

<sup>645</sup> <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/return-and-earn/how-return-and-earn-works/scheme-financial-structure>

<sup>646</sup> Independent Pricing and Regulatory Tribunal. New South Wales Container Deposit Scheme Monitoring the impacts on container beverage prices and competition, 2018

<sup>647</sup> <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/return-and-earn/how-return-and-earn-works/scheme-financial-structure>

<sup>648</sup> Container Exchange, date unknown, Beverage manufacturers, available from: <https://www.containerexchange.com.au/industry-partners/>

<sup>649</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

or via an electronic funds transfer with options for donation and vouchers also provided for<sup>650,651</sup>. Where automated collection facilities are used within a scheme (e.g., Reverse Vending Machine as a stand-alone unit or integrated within a return-to-retail model) customers are commonly provided with a range of options to receive the container refund, including vouchers which can be redeemed at supermarkets for cash or a discount on their shopping bill, direct funds credit (e.g., PayPal) to a nominated bank account, or donation to a charity<sup>652</sup>.

Where a consumer elects not to receive a refund on their eligible scheme containers, they may wish to donate their containers to a charity, school or local community group after which the receiver takes ownership of the refund and the original consumer forgoes the refund. In this case, the community group, school or charity can then elect to receive the eligible refund through the available scheme options. Additionally, a consumer may not wish to return the eligible containers via the scheme collection facilities and may instead elect to place the eligible material in the kerbside recycling bin. In this case, the consumer does not receive the refund, instead the businesses that process the collected kerbside materials (i.e., Material Consolidation Facility or Material Recovery Facility) can claim this amount or may have a refund sharing agreement in place with the local council (refer Section 7 for further information).

The following sections provide a high-level discussion of the various refund options available to customers (e.g., cash, electronic funds transfer, voucher, credit) as each option has been discussed in detail in Section 4.

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*Consumers are also commonly offered the option of donating their refund to not-for-profit groups such as charities, school groups or local community groups*  
*In New South Wales, it was reported in January 2020 that more than AUD\$900,000 has been raised for donations since the implementation of the scheme in December 2017*

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### 11.2.3.1 Cash and Voucher Refund Options

As discussed Section 4, cash is commonly provided as a customer refund method in manual collection depots compared to automated collection points such as Reverse Vending Machines (RVMs) due to security risks such as RVM vandalism<sup>653</sup> (NOTE: RVMs implemented across Australian schemes commonly integrate security cameras to assess site activities and monitor the status of the machine). However, the provision of cash from RVMs is not a common method across the range of global container schemes due to the risk of theft and the associated management of site security. However, RVMs commonly provide a customer with an option to receive a cash equivalent voucher which can be redeemed in store (i.e., where the RVM is located within the footprint of a return-to-retail site) for either a cash payment or as a refund off their shopping bill. In this case, theft is minimised as security of payments are managed by the store.

Broadly, anecdotal evidence from across the Australian container schemes, suggest that many customers prefer receiving their refund as cash for immediate use, so as to avoid any potential risks associated with depositing refunds into user bank accounts (e.g., delayed payments via electronic funds transfer). Receiving cash is also the preferred method of deposit refund identified by consumers in a survey carried by ConsumerNZ in 2020, and which is discussed further in Section 6).

### 11.2.3.2 Electronic Funds Transfer Refund Option

The option of an electronic funds transfer is commonly used across the range of global container return schemes, particularly where the customer is not provided with a cash option or where a bag-drop or mobile container return facility is provided. In these situations, the customer will have the option to either electronically select via touch-pad screen functions (e.g., RVMs) or via attaching a unique tag

<sup>650</sup> Environmental Guidelines for Collection Points, 2000. South Australia EPA

<sup>651</sup> <https://www.containersforchange.com.au/gld/where-can-i-return>

<sup>652</sup> <https://www.tomra.com/en/collection/reverse-vending>

<sup>653</sup> <https://www.dailyliberal.com.au/story/5203519/vandals-attack-reverse-vending-machine-at-victoria-park/>

(issued from the bag-drop location) displaying the customers scheme ID<sup>654</sup> and transaction ID attached to the bag before it is dropped off. The intent of electronic funds transfer is to provide customers with a cashless and time efficient option to have the refund amount directly deposited into a customer account which may include a scheme account or personal bank account. However anecdotal evidence from customers in New South Wales noted situations where the customer could wait in excess of 2-weeks to receive their electronic refund. Further investigation into the mechanics of such a refund option particularly the average time a customer would expect to wait for an electronic refund did not result in a definitive timeframe. However, for an electronic funds option to be effective in a NZ CRS, clear refund timeframe expectations should be communicated to the consumer along with clear processes to follow should there be an issue. Additionally, responsibility to achieve the refund timeframes could be incorporated into contractual key performance indicators and/or criteria required by the Managing Agency that manages the NZ CRS.

### 11.2.3.3 Donation Refund Option

Along with the option of receiving refunds via cash, voucher or electronic funds transfer, consumers are also commonly offered the option of donating their refund to not-for-profit groups such as charities, school groups or local community groups. As discussed in Section 4, in most Australian schemes, except for South Australia, RVMs provide the option of donating the refund amount to charities. In South Australia where only cash is accepted, communities have been able to open their own depots and create an income for themselves and their local communities. In New South Wales, it was reported in January 2020 that more than AUD\$900,000 has been raised for donations since the implementation of the scheme in December 2017<sup>655</sup>. Similarly, during the bushfire season of the summer of 2019-2020, Wildlife Rescue South Coast (WRSC) was featured as a donation partner on RVMs.

As further discussed in Section 4, participants who wish to redeem containers in Queensland must register with a Scheme ID. This has allowed the Managing Agency to have visibility of the community benefits that are provided by the scheme. In November 2019, it was reported that over AUD\$100million was returned to Queenslanders and community groups<sup>656</sup>. Recognising the benefits that the scheme provided the community, the state government offered infrastructure grants of up to AUD\$10,000 to more than 100 organisations and community groups to help them with participating in the scheme. The grants assisted participants with purchasing the equipment for the operation of the collection points.

Where information was available, it is clear that the option of refund donations has been incorporated throughout many global container return schemes to support community initiatives and support the social and environmental objectives of the various schemes. Across Aotearoa New Zealand, there are a wide range of charitable and community groups all of which actively pursue financial contributions from a variety of sources to fund their individual initiatives. As concluded in Section 4, the NZ CRS design will be able to accommodate a range of refund options, including donations supporting consumer choice.

### 11.2.3.4 Other

In Queensland, where customers drop-off eligible scheme containers to Envirobank bag-drop facilities, refunds can be credited to the customer 'Crunch account' as credits after which the customer can use these as either a cash withdrawal via Envirobank partner organisations, transfer

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*Electronic funds transfer is commonly used across the range of global container return schemes, particularly where the customer is not provided with a cash option or where a bag-drop or mobile container return facility is provided*

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<sup>654</sup> A scheme ID is a 9-character alphanumeric code that allows Container Exchange to process payments electronically.

<sup>655</sup> Return and Earn NSW, 2020, 3 billion reasons to celebrate, available from: [https://returnandearn.org.au/exc\\_news/3-billion-reasons-to-celebrate/](https://returnandearn.org.au/exc_news/3-billion-reasons-to-celebrate/)

<sup>656</sup> Waste Management Review, 2019, One billion returns in first year of QLD CDS, available from: <https://wastemanagementreview.com.au/one-billion-returns-in-first-year-of-qld-cds/>

credits to Velocity frequent flyer or redeem credits through gift cards including Coles and JB HiFi stores<sup>657</sup>.

Considering the above customer refund options in the Aotearoa New Zealand context, the NZ CRS refund options can be considered an extension of the Aotearoa New Zealand incorporated organisation whereby refunds generated from within the scheme are encouraged to be credited for use by scheme customers at Aotearoa New Zealand organisations, including, for example, credits linked to New Zealand KiwiSaver, Air NZ frequent flyers and/or credited to home mortgages and/or a savings account.

### 11.3 Deposit Value and Consumer Behaviour

A policy manual document prepared by the OECD<sup>658</sup> provides recommendations on the deposit value and its relationship to consumer behaviour, based on the existing experience of container return schemes in OECD countries, at the time that the report was written. The policy manual was developed to support the European Union's Eastern Partnership countries with designing economic instruments that stimulate behavioural changes and provide incentives for production and consumption of greener and less-damaging products. While being aimed at Eastern European countries, the document draws on the experience of OECD member countries, such as Australia, The United States and Canada, and particularly on the experience of European member countries such as Belgium, Denmark and Germany. The document also draws on other literature that discusses the designs and implementation of product related economic instruments.

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*Where information was available, it is clear that the option of refund donations has been incorporated throughout many global container return schemes to support community initiatives and support the social and environmental objectives of the various schemes*

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The OECD recommends the below design considerations for the deposit value of a container return scheme:

- The deposit value should be high enough to incentivise consumers to put in the additional effort to return their bottles and encourage people to collect litter and return containers.
- The deposit value can impact initial purchasing behaviour:
  - For those who do not intend to return the containers, the deposit will act as a product tax.
  - If the operational costs of the scheme are too high this may discourage customers purchasing beverage container products. Specific examples where this has occurred were not provided in the OECD document, however these deductions are based off their reviews of existing schemes as previously mentioned. According to OECD, this is the main reason that some voluntary schemes have become unsuccessful. Companies operating under a voluntary scheme, such as those operated by beverage producers for glass bottles in Europe, eventually found the voluntary schemes too costly to maintain during increasing market competition, where competitors were shifting to selling beverages in cheaper single-use containers.

The OECD states that a key factor that influences whether product prices are increased for customers is the market condition and price elasticity of the product. If product prices are inelastic, where the market is not as price-sensitive, additional costs on producers and retailers are usually passed on to consumers by increasing product prices. This can negatively impact lower income householders, especially those that consider some beverages to be a necessity. If the market is elastic, producers and retailers may absorb most of the costs (in terms of reduced profits) and offset them in other ways such as passing back to employees in lower wages. Specific examples where this has occurred were not provided in the

<sup>657</sup> <https://envirobank.com.au/bottle-and-can-recycling-queensland/>

<sup>658</sup> OECD 2014, Creating Incentives for Greener Products: A Policy Manual for Eastern Partnership Countries, OECD Green Growth Studies, OECD Publishing, Paris, <https://www.oecd.org/environment/outreach/Creating%20Incentives%20for%20Greener%20Products.pdf>



OECD document, however these deductions are based off their reviews of existing schemes as previously mentioned.

In relation to the monetary value acting as the incentive, the act of storing a new separate stream of recyclables rather than disposing it in the existing bins at home, as most are used to, will require additional time, space and transport requirements. A deposit value that is considered to be too low may not incentivise consumers to put in the additional efforts. This relationship is shown in a figure that has been developed in a report<sup>659</sup> prepared for Zero Waste Scotland for the deposit refund system proposed for single-use beverages in Scotland. The figure shown below, (Figure 29) looks at the deposit values and return rates of 27 container return schemes from nine (9) countries. To make the figure more comparable, the deposit values have been adjusted using purchasing power parity (PPP) to normalise the relative differences in wealth between the nine countries. The report uses the figure to recommend that the Scottish scheme should not have a deposit value below 10p (note that the Scottish container return scheme has adopted a deposit value of 20p [approximately NZD40-cents]), as the figure shows that at low levels, around 5p, the incentive may not be high enough for consumers to return containers and achieve high return rates.

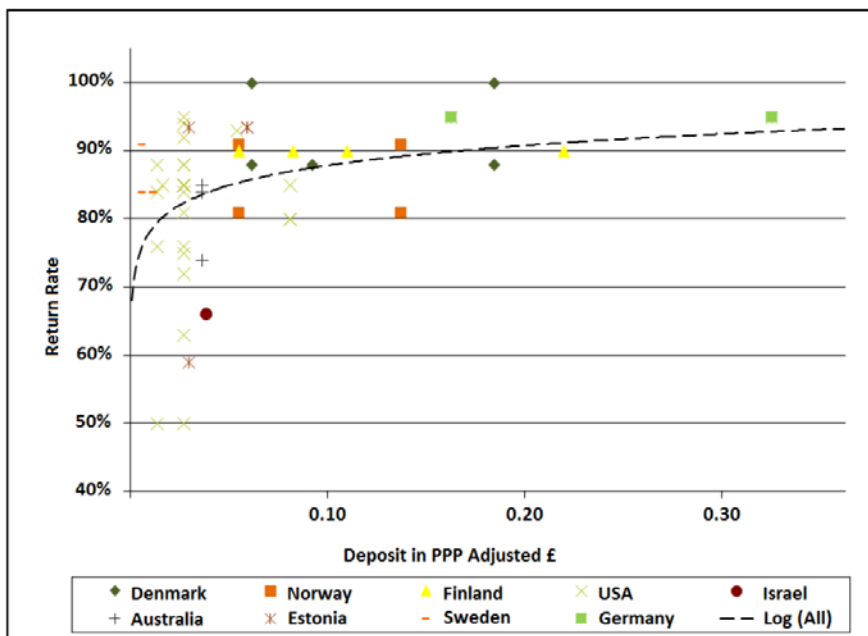


Figure 29: Return rates as a function of deposits in PPP adjusted in £<sup>660</sup>

In addition to the consumer behaviour impacts identified by the OECD, the report<sup>661</sup> prepared for Zero Waste Scotland for the Scottish scheme states that beverage producers and retailers have a clear concern that a deposit on beverages impacts consumer's consumption habits in a way that leads to reduced sales and a switch from deposit to non-deposit bearing beverages. According to this report,

<sup>659</sup> Eunomia Research & Consulting 2015, A Scottish Deposit Refund System: Final Report to Zero Waste Scotland, available from:  
[https://www.zerowastescotland.org.uk/sites/default/files/ZWS%20DRS%20Report\\_MAIN%20REPORT\\_Final\\_v2.pdf](https://www.zerowastescotland.org.uk/sites/default/files/ZWS%20DRS%20Report_MAIN%20REPORT_Final_v2.pdf)

<sup>660</sup> Eunomia Research & Consulting 2015, A Scottish Deposit Refund System: Final Report to Zero Waste Scotland, available from:  
[https://www.zerowastescotland.org.uk/sites/default/files/ZWS%20DRS%20Report\\_MAIN%20REPORT\\_Final\\_v2.pdf](https://www.zerowastescotland.org.uk/sites/default/files/ZWS%20DRS%20Report_MAIN%20REPORT_Final_v2.pdf)

<sup>661</sup> Eunomia Research & Consulting 2015, A Scottish Deposit Refund System: Final Report to Zero Waste Scotland, available from:  
[https://www.zerowastescotland.org.uk/sites/default/files/ZWS%20DRS%20Report\\_MAIN%20REPORT\\_Final\\_v2.pdf](https://www.zerowastescotland.org.uk/sites/default/files/ZWS%20DRS%20Report_MAIN%20REPORT_Final_v2.pdf)

there was no information in the public domain that shows any clear evidence to support this. It is suggested that in principle, if beverages are clearly labelled to inform consumers that they are paying a refundable deposit and if the system for returning the beverages is convenient, then the impact of the deposit on the consumption behaviour of consumers should be limited. The report states that unless there are exceptional circumstances, the majority of consumers should not significantly change their consumption behaviour once they come to trust the container return system to return their deposits.

### 11.3.1 Australia

As part of the research and design stage for the New South Wales Container Deposit Scheme, the New South Wales Environment Protection Authority (EPA) prepared a discussion paper<sup>662</sup> outlining some of the research undertaken to inform their design. The impact of the financial incentive on consumer behaviour and scheme return rates was studied as part of the research. The New South Wales EPA commissioned BehaviourWorks to review literature and discuss findings on the effectiveness of incentives in container return schemes around the world.

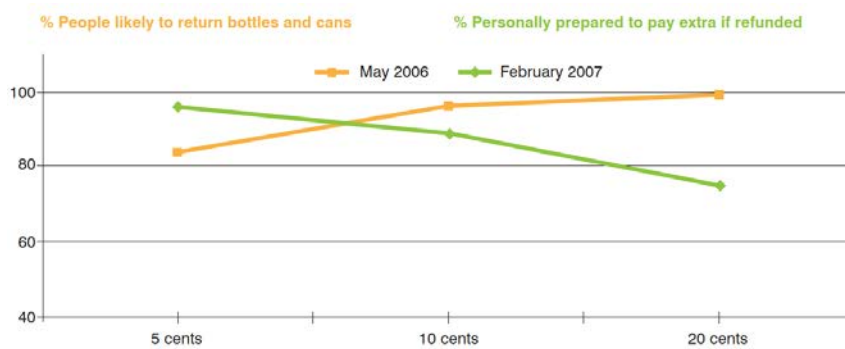
According to the findings, incentives are a strong driver that encourage positive recycling behaviour. In 2014, the City of Sydney undertook a survey to see if incentives impacted people's recycling behaviour. According to the survey, 93% said they would recycle more if a reward was associated with the activity. If the incentive was offered in the form of cash, 80% said they would recycle more. According to the New South Wales EPA, incentives in container return schemes are particularly effective in making positive long-term behaviour changes for people who don't already recycle, people who describe themselves as 'non-environmentalists', and lower income householders.

In 2006 and 2007, the Boomerang Alliance commissioned surveys<sup>663</sup> to be undertaken in Western Australia by Newspoll to understand community attitudes towards container return schemes. The surveys were undertaken on 300 households, representing metropolitan and regional households. According to Newspoll, the standard statistical assessment indicates that the survey results will be accurate within a 6% variation<sup>664</sup>. According to the surveys, most consumers recognised that the scheme meant that there would be an upfront additional payment, however, would be committed to return containers to receive a refund. According to the survey, 96% of consumers were prepared to pay a deposit value of AUD5 cents, 89% were prepared to pay AUD10-cents, and 75% were prepared to pay AUD20-cents. The Boomerang Alliance presents the below graph (Figure 30) in its study comparing the community's likeliness to return bottles and willingness to pay to the different deposit values. As can be seen by the graph, as the deposit value increases from AUD5-cents to AUD20-cents, people's likeliness to return bottles increases but willingness to pay decreases. For the deposit values between AUD5-cents to AUD20-cents, the percentage of people willing to participate in the scheme is continuously more than 75%. At the time of writing this report, there was no information available on any relationships deduced from the surveys about the types of responses and the types of people surveyed, including ethnicity, region, gender or age.

<sup>662</sup> NSW Environment Protection Authority 2015, NSW Container Deposit Scheme: Discussion Paper, available from: <https://temp.web-visions.com.au/wp-content/uploads/2016/02/150286-CDS-discussion-paper.pdf>

<sup>663</sup> The Boomerang Alliance 2008, Container Deposits: The common sense approach towards a zero waste society, available from: [https://d3n8a8pro7vhm.cloudfront.net/boomerangalliance/pages/110/attachments/original/1438369531/common\\_sense\\_container\\_deposits\\_zero\\_waste\\_low\\_res\\_web.pdf?1438369531](https://d3n8a8pro7vhm.cloudfront.net/boomerangalliance/pages/110/attachments/original/1438369531/common_sense_container_deposits_zero_waste_low_res_web.pdf?1438369531)

<sup>664</sup> The Boomerang Alliance, 2008, Submission to the Senate Standing Committee on Environment, Communications and the Arts: Management of Australia's waste streams and the Drink Container Recycling Bill, available from: [https://d3n8a8pro7vhm.cloudfront.net/boomerangalliance/pages/107/attachments/original/1438369227/ba\\_senate\\_CD\\_subm\\_2009.pdf?1438369227](https://d3n8a8pro7vhm.cloudfront.net/boomerangalliance/pages/107/attachments/original/1438369227/ba_senate_CD_subm_2009.pdf?1438369227)



**Figure 30: 2004 Survey results of people’s likeliness to return bottles compared to willingness to pay<sup>665</sup>**

### 11.3.2 Europe

A 2008 study<sup>666</sup> undertaken for container deposit systems for the United Kingdom identified that the value of the deposit must be high enough to incentivise consumers to return containers, and that higher deposit values resulted in higher collection rates. The study however identified that the incentives provided by the deposit value could be dependent on the type and cost of the beverage itself, and that this could have unexpected consequences on consumer behaviours. The study does not provide existing examples where this has occurred however does provide a general explanation as to where this could occur. The study mentions that if a low-cost soft drink beverage has a lower product price than the value of the deposit, consumers may be discouraged from purchasing the beverage. If a product price is relatively high, such as for some products like Champagne, the deposit value may not be high enough to incentive consumers to return the containers.

A research project<sup>667</sup> was undertaken in Sweden to understand how the increase of the deposit value for metal beverage cans impacted the behaviour of different members of the community. The study looked at the recycling behaviours of different socioeconomic groups in Sweden. The study compared groups based on their income, education, immigration, environmental awareness and population density.

According to the project, in places where the majority of the population is environmentally conscious, governments are more likely to find support for the implementation of container return schemes. Additionally, the two main factors that influence people to recycle are monetary benefits that come from recycling, and the experience of ‘warm glow’, which is the personal satisfaction that comes from having benefited society and fulfilled social norms.

The research project reported the following results:

- The increase in deposit value had a positive effect on the recycling of metal beverage containers.
- The increase in deposit value did not significantly impact beverage sales.
- The relationship between income and deposit changes was negative. As income increased, people became less responsive to increases in deposit value.

<sup>665</sup> The Boomerang Alliance 2008, Container Deposits: The common sense approach towards a zero waste society, available from:

[https://d3n8a8pro7vhmx.cloudfront.net/boomerangalliance/pages/110/attachments/original/1438369531/comm\\_on\\_sense\\_container\\_deposits\\_zero\\_waste\\_low\\_res\\_web.pdf?1438369531](https://d3n8a8pro7vhmx.cloudfront.net/boomerangalliance/pages/110/attachments/original/1438369531/comm_on_sense_container_deposits_zero_waste_low_res_web.pdf?1438369531)

<sup>666</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>667</sup> Thörnelöf I. 2016, Increasing Recycling through Container Deposit: A Fixed Effects analysis of the Swedish increase in Container Deposit September 2010, available from: <https://uu.diva-portal.org/smash/get/diva2:954205/FULLTEXT01.pdf>

- The relationship between income and education was positive. As education increased, people became significantly more responsive to increases in deposit value.
- A relationship between deposit value and immigration, environmental awareness or population density could not be formed as part of the research project.

As discussed in Section 5, the differences in beverage prices and deposit values in Europe have driven consumers to purchase beverages across country borders, for example where Danish consumers cross the border to Germany to buy beer at cheaper prices<sup>668</sup>. Acknowledging that Aotearoa New Zealand is not impacted by transboundary issues, this example shows that the behaviour of European consumers is impacted by product prices. This has been discussed in more detail in Section 5.

### 11.3.3 United States of America

A study undertaken in 2012 looked at ways to increase the recycling of plastic water bottles in the United States<sup>669</sup>. In order to compare the effectiveness of different policies, the study compared the behaviour of consumers in America under different recycling schemes. The study compared three different type of recyclers, being 'nonrecyclers', 'moderate recyclers' and 'diligent recyclers', and their recycling behaviour depending on the recycling systems that exist in their state. These include:

- States with no deposit law;
- States with a deposit law that doesn't cover water bottles;
- States with a deposit law that covers water bottles; and
- States with a mandatory, opportunity, or planning law, but with no deposit law for water bottles.

The results of this comparison are shown in the table below (Table 18), which is taken from the 2012 study. The comparison showed that states with no bottle deposit systems had the lowest rate of bottles recycled and states with deposit systems that included plastic bottles had the highest rate of bottles recycled. The study states that this shows that financial incentives on water bottles, and the convenience of returning the water bottles along with other bottles promotes their recycling. The table below also shows that for deposit systems that include water bottles, the percentage of nonrecyclers decreases to 6%, and the percentage of diligent recyclers increases to 87%.

**Table 18: Recycling behaviour under various deposit systems<sup>670</sup>**

Deposit regimes	Number of bottles recycled out of 10, mean (standard deviation)	Percent who recycle at different levels			
		Non-recyclers 0	Moderate recyclers 1-7	Diligent recyclers 8-10	N
No deposit law	5.6 (4.5)	35	12	53	416
Deposit law does not cover water bottles	7.3 (3.9)	17	13	69	75
Deposit law covering water	8.8 (2.6)	6	7	87	117

<sup>668</sup> Schneider J. et al. 2011, A European Refunding Scheme for Drinks Containers, Directorate-General for External Policies, Policy Department, available from:

[https://www.europarl.europa.eu/RegData/etudes/note/join/2011/457065/IPOL-AFET\\_NT\(2011\)457065\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/note/join/2011/457065/IPOL-AFET_NT(2011)457065_EN.pdf)

<sup>669</sup> Viscusi, W.K., J. Hubery, and J. Bell. 2012. Alternative Policies to Increase Recycling of

Plastic Water Bottles in the United States, available from:

[https://law.vanderbilt.edu/files/archive/310\\_Alternative-Policies-to-Increase-Recycling-of-Plastic-Water-Bottles-in-the-United-States.pdf](https://law.vanderbilt.edu/files/archive/310_Alternative-Policies-to-Increase-Recycling-of-Plastic-Water-Bottles-in-the-United-States.pdf)

<sup>670</sup> Viscusi, W.K., J. Hubery, and J. Bell. 2012. Alternative Policies to Increase Recycling of Plastic Water Bottles in the United States, available from: [https://law.vanderbilt.edu/files/archive/310\\_Alternative-Policies-to-Increase-Recycling-of-Plastic-Water-Bottles-in-the-United-States.pdf](https://law.vanderbilt.edu/files/archive/310_Alternative-Policies-to-Increase-Recycling-of-Plastic-Water-Bottles-in-the-United-States.pdf)

Deposit regimes	Number of bottles	Percent who recycle at different levels			
bottles					
Mandatory, opportunity, or planning law; but no plastic water bottle deposit law	7.6 (3.7)	15	11	74	169
Full sample	6.4 (4.3)	27	11	62	608

Recycling categories show the percentage of the subsample with that recycling behaviour.  
Source: Based on the 2009 Viscusi and Huber survey of recycling behaviour administered by Knowledge Networks.

To further assess the impact of container deposit systems on water bottles, the study looks at survey results comparing consumer's water bottle usage and recycling behaviour before and after bottle deposit laws were implemented in 2009 in Oregon and Connecticut. The results of this comparison are shown in the table below (Table 19) taken from the study. According to the study, the table shows that there was an insignificant decrease in the demand for bottled water as a consequence of the new deposit laws, but the return rate of bottles had a significant increase, from 12% to 30%. The mean number of bottles also increased from 7.6 to 8.8 out of every 10 bottles purchased. The study shows that consumers can be encouraged to substantially increase their recycling habits through the implementing of economic incentives.

**Table 19: Usage and recycling behaviour of bottled water in Connecticut and Oregon before and after changes implementation of deposit laws<sup>671</sup>**

	Before deposit law change		After deposit law change		Significance of t test
	N	Mean	N	Mean	
Bottled water use	112	68%	66	61%	
Return any bottles for deposit	68	12%	37	30%	**
Number of bottles recycled out of 10	68	7.6	37	8.8	*
Recycle 0	68	10%	37	5%	
Recycle 1-7	68	19%	37	8%	
Recycle 8-10	68	71%	37	86%	*
Use kerbside recycling	68	54%	37	59%	
Use recycling centre	68	21%	37	11%	

\*significant at the 10% level; \*\*significant at the 5% level  
Source: Based on the 2008 and 2009 Viscusi and Huber surveys of recycling behaviour administered by Knowledge Networks.

## 11.4 Deposit Value and Scheme Return Rate

According to OECD's policy manual document<sup>672</sup>, the refund amount is the key element in the system that governs consumer behaviours and is consequently likely to impact the performance of the system and success in achieving a high return rate.

<sup>671</sup> Viscusi, W.K., J. Hubery, and J. Bell. 2012. Alternative Policies to Increase Recycling of Plastic Water Bottles in the United States, available from: [https://law.vanderbilt.edu/files/archive/310\\_Alternative-Policies-to-Increase-Recycling-of-Plastic-Water-Bottles-in-the-United-States.pdf](https://law.vanderbilt.edu/files/archive/310_Alternative-Policies-to-Increase-Recycling-of-Plastic-Water-Bottles-in-the-United-States.pdf)

To justify the high costs that may be associated with a separate collection system, the system should incentivise a high return rate. If the deposit value is too low for consumers to be incentivised to return containers, costs may be incurred that are associated with the disposal of the container in kerbside. The OECD does not provide examples of specific schemes where this has occurred, however they provide the general example of glass bottles to explain what these costs could be. If a glass bottle is disposed in kerbside rather through the scheme collection point network, the following costs can be incurred:

- The higher cost associated with replacing the bottle with a new one rather than reusing the returned bottle;
- The waste management costs associated with the collection of the bottles in kerbside; and
- The environmental damage caused by bottles discarded as litter.

With consideration of these costs, the OECD states that the refund value should be set at minimum as high as the total of these costs incurred if bottles are not returned. The financial impacts of increasing return rates on consumers, as ratepayers of kerbside fees, is further discussed in Section 11.4.1 below.

Acknowledging the container return rate percentages of other global schemes as presented in Section 4, Table 20 below shows the relative position of a NZD20-cent and NZD10-cent deposit value compared with other global deposit rates.

**Table 20: Existing deposit rates converted to \$NZ-cents and return rates<sup>673</sup>**

Country	Deposit Rate \$NZ-cents	Return Rate
Norway	40	95%
Germany	35	98%
Netherlands	35	95%
Denmark	31	90%
Finland	30	92%
Sweden	30	85%
Saskatchewan (Canada)	30	82%
Northwest Territories (Canada)	26	88%
Alberta (Canada)	26	86%
Yukon (Canada)	25	82%
Vermont (USA)	21	75%
Maine (USA)	21	84%
Nova Scotia (Canada)	21	81%
British Columbia (Canada)	21	82%
Prince Edward Island (Canada)	21	80%
Manitoba** (Canada)	21	79%
Ontario (Canada)	21	87%

<sup>672</sup> OECD 2014, Creating Incentives for Greener Products: A Policy Manual for Eastern Partnership Countries, OECD Green Growth Studies, OECD Publishing, Paris, <https://www.oecd.org/environment/outreach/Creating%20Incentives%20for%20Greener%20Products.pdf>

<sup>673</sup> Container return rate percentages extracted from Table 8 Section 4

Country	Deposit Rate \$NZ-cents	Return Rate
Quebec (Canada)	21	71%
Newfoundland (Canada)	21	62%
<b>New Zealand</b>	<b>20</b>	<b>(aim 85-95%)</b>
Lithuania	16	92%
Estonia	16	83%
Michigan (USA)	15	92%
Oregon (USA)	15	75%
California (USA)	13	77%
Croatia	12	87%
New Brunswick (Canada)	11	73%
Israel	11	77%
South Australia	11	76.9%
<b>New Zealand</b>	<b>10</b>	<b>(aim 85-95%)</b>
Iowa (USA)	7	71%
Hawaii (USA)	7	65%
Massachusetts (USA)	7	57%
New York (USA)	7	66%
Connecticut (USA)	7	51%

### 11.4.1 Australia

According to the research undertaken by the New South Wales Environment Protection Authority<sup>674</sup>, recovery rates of containers are higher in places with schemes that offer financial incentives than in places that do not. According to 2008-2009 data, the recycling rate of beverage containers in South Australia was higher than the national averages. The data is below:

- 85% for glass bottles compared to the national average of 36%;
- 84% for aluminium cans compared to the national average of 63%; and
- 75% for PET bottles compared to the national average of 36%.

The New South Wales Environment Protection Authority found similar comparisons in recycling rates for American states that introduced schemes with financial incentives, where the recycling rate increased, and litter decreased after the implementation of the scheme. This is further discussed in Section 11.4.2.

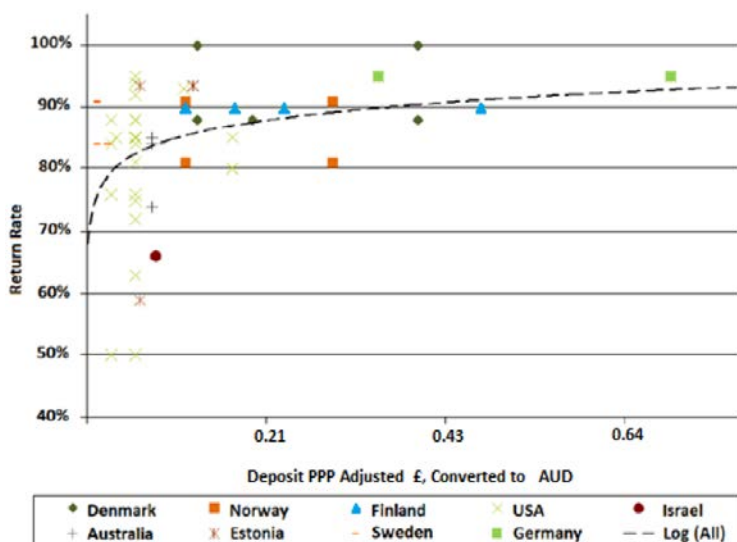
The New South Wales Environment Protection Authority stated that evidence has shown that container return rates vary depending on the value of the financial incentive, and that legislated container return schemes that offer a financial incentive demonstrate high rates of container recovery. This was based on evidence provided by a literature review undertaken in 2015 by P Bragg and B Wright, which was commissioned by the New South Wales Environment Protection Authority. The literature review document is not available in the public domain, however the discussion paper prepared by the New South Wales Environment Protection Authority provides an overview of the outcomes of the

<sup>674</sup> NSW Environment Protection Authority 2015, NSW Container Deposit Scheme: Discussion Paper, available from: <https://temp.web-visions.com.au/wp-content/uploads/2016/02/150286-CDS-discussion-paper.pdf>

literature review. The literature review looked at 693 citations that covered 40 legislated schemes, five (5) trials and two (2) non-legislated schemes.

According to the New South Wales Environment Protection Authority, incentives with a higher financial value generated higher return rates. In 2008, when South Australia increased the deposit value from AUD5-cents to AUD10-cents to respond to the effects of inflation, there was an immediate increase in collections and decrease in litter, increasing the recovery rate from 70%. The New South Wales Environment Protection Authority's research also showed that schemes with financial incentives continued to be effective over time and did not only generate interest at the start of operation. This is said to be supported by the many global schemes that have been in operation for an average of 25-years.

The New South Wales Environment Protection Authority however highlighted that the relationship between the deposit value and return rates is not linear. After a certain point, high value incentives can generate smaller increases in return rates. Other variables can also contribute to this such as the location of collection return facilities. To show this relationship, the discussion paper includes the below figure (Figure 31), showing the relationship between the deposit value and return rates. The figure has been taken from the report<sup>675</sup> prepared for the deposit refund system proposed for single-use beverages in Scotland. This report and figure have been discussed in Section 11.3; however, the New South Wales Environment Protection Authority includes this figure with the deposit values shown adjusted to AUD.



**Figure 31: Return rates as a function of deposit value, converted to AUD<sup>676</sup>**

A feasibility study<sup>677</sup> undertaken in 2009 for a container deposit scheme in Tasmania suggested that a deposit value of AUD20-cents is adopted rather than AUD10-cents. The study stated that the value is expected to help address the diminished deposit value over time which eventually results in decreased recycling rates. Additionally, if unredeemed deposits are generated, this would generate higher funding

<sup>675</sup> Eunomia Research & Consulting 2015, A Scottish Deposit Refund System: Final Report to Zero Waste Scotland, available from: [https://www.zerowastescotland.org.uk/sites/default/files/ZWS%20DRS%20Report\\_MAIN%20REPORT\\_Final\\_v2.pdf](https://www.zerowastescotland.org.uk/sites/default/files/ZWS%20DRS%20Report_MAIN%20REPORT_Final_v2.pdf)

<sup>676</sup> Eunomia Research & Consulting 2015, A Scottish Deposit Refund System: Final Report to Zero Waste Scotland, available from: [https://www.zerowastescotland.org.uk/sites/default/files/ZWS%20DRS%20Report\\_MAIN%20REPORT\\_Final\\_v2.pdf](https://www.zerowastescotland.org.uk/sites/default/files/ZWS%20DRS%20Report_MAIN%20REPORT_Final_v2.pdf)

<sup>677</sup> Hyder Consulting 2009, Feasibility Study of a Container Deposit System for Tasmania, available from: [https://www.europarl.europa.eu/RegData/etudes/note/join/2011/457065/IPOL-AFET\\_NT\(2011\)457065\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/note/join/2011/457065/IPOL-AFET_NT(2011)457065_EN.pdf)



available from unredeemed deposits. The study however does identify that the higher deposit would require increased fraud mitigation measures. In another 2018 study<sup>678</sup> for a Tasmanian container deposit scheme, it is stated that there are doubts that the AUD10-cent deposit value is a high enough amount to incentivise refund rates. The study states however that the terms of reference of this study stipulate that Tasmania's scheme must be consistent with Australia's mainland jurisdictions. Additionally, the study states that for practicality purposes, Tasmania will need to align its deposit value with the other Australian states. The paper hence recommends that the Tasmanian Government should look for ways to encourage Australia to undertake a periodic interjurisdictional review of the deposit amount. According to the study, to keep up with inflation, preliminary analysis suggests that a AUD5-cent deposit increase is recommended for approximately every 10-years.

The 2004 study undertaken by the Boomerang Alliance<sup>679</sup> stated that the deposit value is the most important factor in impacting recovery rates, followed by the convenience of the container return facilities. The study outlines that a system with a high deposit value but with low convenience can lead to reduced community support of the system. The New South Wales Environment Protection Authority discussion paper<sup>680</sup> provides a different perspective stating that even if the collection network is relatively inconvenient, people will still be motivated to participate and return containers if the financial incentive is strong. If the incentive is relatively weak, but the collection network is pervasive and easy to access, then the same return rate is possible. If both the incentive is weak and the collection network does not provide for easy access and convenience, then it is likely that people will dispose of their containers in their kerbside bins. To support their statements, both the Boomerang Alliance and the New South Wales Environment Protection Authority provide the example of South Australia, however again with different perspectives.

The Boomerang Alliance state that the South Australian scheme is limited by its collection point network. The collection points are said to be located approximately 5km from major retail beverage point of sales, such as supermarkets. Due to this collection network model, Adelaide has 38 refund points compared to the 94 suggested by the Boomerang Alliance. Based on estimates by the Boomerang Alliance, Australia nationally would have over 1,200 collection points that would also be able to collect a variety of other problem wastes. Hence 38 collection points in Adelaide is considered insufficient. In contrast, according to the New South Wales Environment Protection Authority, the South Australian collection network provides sufficient convenience and access to consumers, with most South Australians said to be living within 5km or 6km of a collection depot. This is supplemented by the financial incentive. Additionally, traffic problems in Adelaide do not appear to have diminished the easy access to the depots. With this collection network in place and financial incentive, South Australia has maintained a container recovery rate close to 80% and litter is kept at a low level.

In addition to the impact that the deposit value has on the return rate of containers, the financial impact on consumers as ratepayers of council and kerbside fees should be considered. According to the discussion paper prepared by the New South Wales Environment Protection Authority<sup>681</sup>, the financial impacts of a high return rate on consumers should be primarily positive. According to the New South Wales Environment Protection Authority, this occurs when councils and MRFs are able to realise the benefits of redeeming beverage containers collected through kerbside. By law, the benefits should be passed on to ratepayers and residents. Section 504 of the Local Government Act 1993 states that councils must not charge fees for domestic waste management services that 'exceed the reasonable

<sup>678</sup> Marsden Jacob Associates, 2018, A Model Framework for Container Refund Scheme in Tasmania.

<sup>679</sup> The Boomerang Alliance 2008, Container Deposits: The common sense approach towards a zero waste society, available from:

[https://d3n8a8pro7vhmx.cloudfront.net/boomerangalliance/pages/110/attachments/original/1438369531/comm\\_on\\_sense\\_container\\_deposits\\_zero\\_waste\\_low\\_res\\_web.pdf?1438369531](https://d3n8a8pro7vhmx.cloudfront.net/boomerangalliance/pages/110/attachments/original/1438369531/comm_on_sense_container_deposits_zero_waste_low_res_web.pdf?1438369531)

<sup>680</sup> NSW Environment Protection Authority 2015, NSW Container Deposit Scheme: Discussion Paper, available from: <https://temp.web-visions.com.au/wp-content/uploads/2016/02/150286-CDS-discussion-paper.pdf>

<sup>681</sup> NSW Environment Protection Authority 2015, NSW Container Deposit Scheme: Discussion Paper, available from: <https://temp.web-visions.com.au/wp-content/uploads/2016/02/150286-CDS-discussion-paper.pdf>

cost to the council of providing these services<sup>682</sup>. According to the New South Wales Environment Protection Authority, if costs associated to kerbside services are reduced for councils, then councils should either reduce their domestic waste management fees charged to ratepayers or provide ratepayers with a wider range of waste services. If councils expand their waste management services, then the community at large will benefit. If councils choose to reduce their domestic waste management fees then ratepayers will have their council rates reduced. This can also apply to residents who do not pay council fees but who pay rent as their rent can be subsequently reduced. The New South Wales Environment Protection Authority however highlights that the ability of councils to reduce costs for ratepayers depends on them experiencing the benefits from the refund of containers through kerbside, which depends on their contractual agreements for waste services. The Boomerang Alliance<sup>683</sup> also state that ratepayers should benefit since gate fees to councils should be significantly reduced because of the reduced tonnages of materials in kerbside. This should lead to reduced domestic waste management fees to ratepayers.

A financial assessment<sup>684</sup> undertaken for the Tasmanian scheme in 2013 provides the positive financial impact expected to be experienced by kerbside in Tasmania because of the implementation of container deposit system. According to the financial assessment, the reduced volume of materials in kerbside has potential to benefit councils and subsequent ratepayers and lead to a financial benefit of AUD\$1.3million per year. This value consists of the below:

- Reduced collection costs of an average of AUD\$257,000 per year;
- Reduced processing costs of an average of AUD\$340,000 per year; and
- Improved material value of an average of AUD\$750,000 per year.

These costs are discussed in greater detail in the 2013 financial assessment, with assumptions and variations identified. A brief overview is provided in this document. In relation to reduced collection costs, the benefits are anticipated to slowly accumulate over time. In the short-term collections would still be charged per lift and the same number of bins would need to be collected despite the reduced volumes. Based on the kerbside practices and volumes in 2013, the yearly saving of AUD\$257,000 compared to the total yearly kerbside collection costs of AUD\$5.8million will lead to a reduction in collection costs of approximately AUD\$1.31 per service per year.

The reduction in processing costs is anticipated to come from reduced gate fees and processing fees for the sorting of the kerbside recyclables. Based on the kerbside practices and volumes in 2013, the saving of AUD\$340,000 compared to the total yearly processing costs of AUD\$2million, will lead to a reduction in gate fees for processing recyclables of AUD\$1.73 per service per year, or AUD\$8.70 per tonne delivered for processing.

In relation to the improved material value in Tasmania, assuming that kerbside materials can be redeemed for an AUD10-cents value, the value of the materials in kerbside is anticipated to increase from an average of AUD\$90 per tonne to AUD\$130 per tonne. While the total volume of kerbside materials is anticipated to reduce, the value of the materials in kerbside is anticipated to increase<sup>685</sup>.

<sup>682</sup> [http://www8.austlii.edu.au/cgi-bin/viewdoc/au/legis/nsw/consol\\_act/lga1993182/s504.html](http://www8.austlii.edu.au/cgi-bin/viewdoc/au/legis/nsw/consol_act/lga1993182/s504.html)

<sup>683</sup> The Boomerang Alliance 2008, Container Deposits: The common sense approach towards a zero waste society, available from:

[https://d3n8a8pro7vhm.cloudfront.net/boomerangalliance/pages/110/attachments/original/1438369531/comm\\_on\\_sense\\_container\\_deposits\\_zero\\_waste\\_low\\_res\\_web.pdf?1438369531](https://d3n8a8pro7vhm.cloudfront.net/boomerangalliance/pages/110/attachments/original/1438369531/comm_on_sense_container_deposits_zero_waste_low_res_web.pdf?1438369531)

<sup>684</sup> Equilibrium OMG Pty Ltd 2013, An assessment of the potential financial impacts of a Container Deposit System on Local Government in Tasmania, available from:

[https://www.lgat.tas.gov.au/\\_\\_data/assets/pdf\\_file/0024/323268/CDS-impacts-for-Tasmanian-Local-Government-FINAL-December-2013.pdf](https://www.lgat.tas.gov.au/__data/assets/pdf_file/0024/323268/CDS-impacts-for-Tasmanian-Local-Government-FINAL-December-2013.pdf)

<sup>685</sup> Equilibrium OMG Pty Ltd 2013, An assessment of the potential financial impacts of a Container Deposit System on Local Government in Tasmania, available from:

## 11.4.2 United States of America

The 2018 study<sup>686</sup> undertaken for Tasmania identifies American examples and states that in general, jurisdictions with higher deposit amounts tend to have higher return rates and provides Germany and Michigan as examples. Similarly, jurisdictions with lower deposit values have lower return rates, such as New York. Table 21 below is taken from the 2018 study for the Tasmanian scheme, which intends to show this relationship.

The study does additionally identify that the mandatory return-to-retail system is a contributing factor to the success of Michigan's scheme however states that this factor comes after allowing for the incentives provided by the high deposit amount. According to the University of Vermont<sup>687</sup>, in 2011, Michigan had the highest deposit value in the United States and the highest recycling rate in the country, at 97%.

**Table 21: Key aspects of international schemes<sup>688</sup>**

Region/country	Retailer obligation? (Y/N/partial)	Deposit (D) or Refund (R) Scheme?	Scheme administered by?	Deposit amount (\$A equiv.)	Regulated redemption target?	Approximate redemption rate (%)
NSW (Australia)	N	R	Beverage suppliers	0.10	N	nya
NT (Australia)	N	R	Beverage suppliers	0.10	N	60
South Australia	N	R	Beverage suppliers	0.10	N	78-80
Alberta (Canada)	N	R	Beverage suppliers	0.10-0.25	N	80-85
British Columbia (Canada)	partial	D	Beverage suppliers	0.05-0.20	Y	80-85
Saskatchewan (Canada)	Y	D	Non industry/not – for-profit	0.06-0.45	Y	85
Ontario (Canada)	partial	R	Beverage suppliers/ Government	0.10-0.20	N	75-80
Germany	Y	D	Beverage suppliers	0.10-0.20	N	95+
California (USA)	Y	D	Government	1.06-0.10	N	75-80
Massachusetts (USA)	Y	D	Government	0.06	N	60-65

[https://www.lgat.tas.gov.au/\\_\\_data/assets/pdf\\_file/0024/323268/CDS-impacts-for-Tasmanian-Local-Government-FINAL-December-2013.pdf](https://www.lgat.tas.gov.au/__data/assets/pdf_file/0024/323268/CDS-impacts-for-Tasmanian-Local-Government-FINAL-December-2013.pdf)

<sup>686</sup> Marsden Jacob Associates, 2018, A Model Framework for Container Refund Scheme in Tasmania.

<sup>687</sup> The University of Vermont, 2012, Vermont Legislative Research Service.

<sup>688</sup> Marsden Jacob Associates, 2018, A Model Framework for Container Refund Scheme in Tasmania.

Michigan (USA)	Y	D	Beverage suppliers	0.010	N	90+
New York (USA)	partial	D	Beverage suppliers	0.05	N	65-70
Oregon (USA)	Y	R	Beverage suppliers	0.010	N	80-85
Vermont (USA)	Y	R	Beverage suppliers	0.05-0.10	Y	75-80

In addition to the information from the study for the Tasmanian scheme, the impact that the deposit value has on return rates and recycling rates in America can also be seen through Table 18 and Table 19 shown in Section 11.3.3. As mentioned in Section 11.3.3, for the example of bottled water, states with container return schemes have higher return rates and recycling rates than states with container return schemes.

The New South Wales Environment Protection Authority discussion paper<sup>689</sup> provides examples for the positive impact that financial incentives have on reducing litter and increasing recycling rates of beverage containers in the United States. According to a literature review report commissioned by the New South Wales Environment Protection Authority, the amount of beverage container litter in the United States has been reduced by a range of 69% to 83% in seven states that introduced container deposit schemes with financial incentives. In New York, the amount of beverage container litter was reduced by a range of 70% to 80% after one year of implementing the container deposit scheme. In California, the recycling rate of beverage containers has increased from 52% to 80% since the introduction of the scheme in 1987. The literature review commissioned by the New South Wales Environment Protection Authority, which discusses these results, is not available in the public domain.

### 11.4.3 Canada

For the first time since the scheme was introduced in 1972, Alberta increased the deposit value of all the beverage containers included in its scheme in 2008<sup>690</sup>. The deposit value for beverage containers up to 1L was raised from CAD5-cents to CAD10-cents. The deposit value for beverage containers greater than 1L was raised from CAD20-cents to CAD25-cents. After three years of operation with the increased deposit values, the collection rates for the containers increased by approximately 13%. The deposit value was increased because Alberta recognised the effects of inflation on deposit values, noting that the value of the refund relative to the purchase price of beverages decreased to a point where it no longer presented enough of an incentive for containers to be returned.

For the first time since 1992, Saskatchewan increased the deposit value in 2017 for certain sizes of metal, plastic, aseptic containers and paper-based cartons, from CAD5-cents to CAD10-cents and from CAD20-cents to CAD25-cents. The deposit value was increased to increase recycling rates in Saskatchewan, and to better align with the other provinces in Canada<sup>691</sup>.

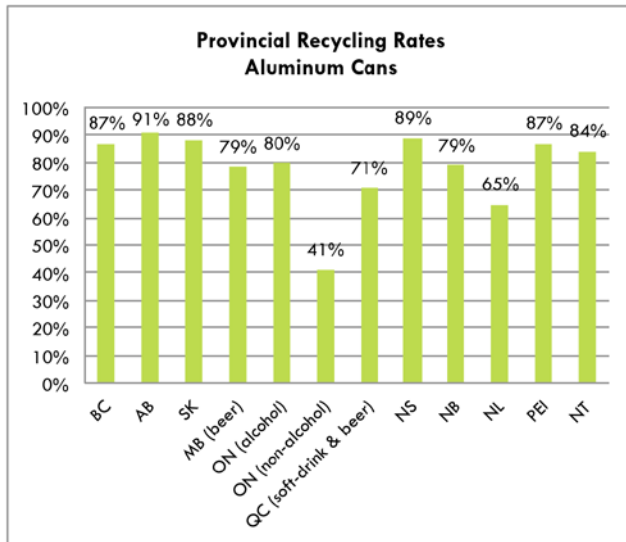
<sup>689</sup> NSW Environment Protection Authority 2015, NSW Container Deposit Scheme: Discussion Paper, available from: <https://temp.web-visions.com.au/wp-content/uploads/2016/02/150286-CDS-discussion-paper.pdf>

<sup>690</sup> CM Consulting, 2018, Who Pays What - An Analysis of Beverage Container Collection and Costs in Canada

<sup>691</sup> Saskatchewan.ca 2017, Milk Containers Added to SARCAN Program; Existing Beverage Deposits Increase April 1, available from: <https://www.saskatchewan.ca/government/news-and-media/2017/march/22/budget-milk-containers-added-to-recycle>

According to CMI Consulting<sup>692</sup>, there is strong evidence suggesting that the deposit amount impacts the return rate of containers, however besides Alberta and Saskatchewan, most Canadian states have kept the same value of the deposit.

In addition to impacting return rates, deposit values in Canada have significant impact on the recycling rates of container beverages. This can be shown through the recycling rates of aluminium cans in Canada in 2016, shown in the figure below (Figure 32). This figure has been taken from the report prepared by CMI Consulting.



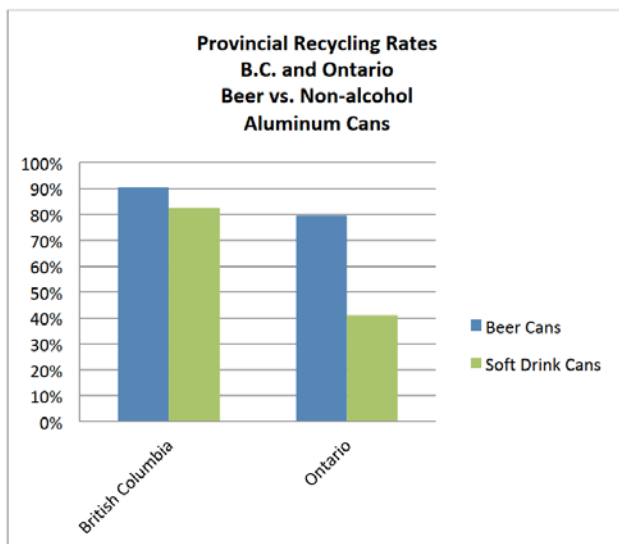
**Figure 32: 2016 Provincial recycling rates of aluminium cans in Canada**<sup>693</sup>

In 2016, Alberta had the highest recycling rate in the country for aluminium cans, at 91%, and this is attributed to the higher deposit of CAD10-cents. In 2018, Quebec was highly considering increasing the deposit value from CAD5-cents to CAD10-cents. CMI Consulting states that this is likely due to the fact that Quebec has one of the lowest recycling rates in the country. In 2016, Quebec's recycling rate for aluminium cans was 71%, while most other provinces had recycling rates ranging from 79% to 91%. This is attributed to the low deposit on beer cans, being half the value of the deposit in other provinces, and to the fact that Quebec's scheme is limited to carbonated beverage cans, which has created confusion for consumers.

Figure 33 below, taken from CMI Consulting's report, shows that in 2016, British Columbia's recycling rate for beer cans was 91%, while the recycling rate for soft drink cans was 82%. This is attributed to the fact that the deposit on beer cans is CAD10-cents, and double that of the soft drink cans which is CAD5-cents. For Ontario, the large difference in recycling rates for beer cans and soft drink cans is because beer cans have a deposit on them while soft drink cans do not and are collected through kerbside recycling.

<sup>692</sup> CM Consulting, 2018, Who Pays What - An Analysis of Beverage Container Collection and Costs in Canada

<sup>693</sup> CM Consulting, 2018, Who Pays What - An Analysis of Beverage Container Collection and Costs in Canada



**Figure 33: 2016 Recycling rates of aluminium beer cans and soft drink cans in Ontario and British Columbia**<sup>694</sup>

## 11.5 New Zealand Consumer Surveys

Two (2) surveys were undertaken as part of this project to understand consumer attitudes towards the NZ CRS. The first survey was undertaken in February and March 2020, with 2114 New Zealanders surveyed, and the second in June 2020 with 1516 New Zealanders surveyed. Those surveyed were chosen to create a nationally representative sample in terms of age, gender and region.

Both surveys showed that there was strong support towards the NZ CRS, with 78% being in favour in the first survey and 70% in the second survey. In the first survey, only 10% of responders didn't support the scheme. Most of those were people with an annual household income less than NZD\$25,000 and people with no access to kerbside recycling.

The below sections discuss in more detail the attitudes of those surveyed towards different aspects of the NZ CRS.

### 11.5.1 Consumer Attitudes Towards Different Aspects of the Container Return Scheme

While the majority of those surveyed were in favour of NZ CRS, a small percentage of people were either opposed to the scheme or uncertain. The reasons for the opposition or uncertainty included preference to use the kerbside recycling system, reluctance to pay an administration fee and/or a deposit and needing to have more information to make a decision.

81% of those surveyed believed that it is important to recycle containers, with the majority of supporters being women, people aged 50 or over, people from Hawke's Bay, and people with access to kerbside recycling. Men, people aged 18 to 39, and people with no access to kerbside recycling were less likely to find recycling of containers important.

In terms of scope of containers, 64% believed that the NZ CRS should cover plastic, glass and metal. 15% were in favour of plastic and glass only and 6% of plastic only.

70% of those surveyed were in favour of supermarkets as being the most convenient for returning containers. 63% were in favour of collection depots, and 40% of other retail outlets such as bottle

<sup>694</sup> CM Consulting, 2018, Who Pays What - An Analysis of Beverage Container Collection and Costs in Canada

stores. Of the 5% that said they wouldn't participate, 71% stated that they would prefer to use their kerbside recycling bins.

The members who were surveyed were also asked to identify the factors that they believed would be important in ensuring a successful scheme. The below percentages illustrate the views of respondents.

- 79% identified the need for convenience of container return facilities;
- 67% identified the need to easily understand the scope of containers;
- 64% identified that the scope of containers would need include a wide range of beverage containers;
- 62% identified that there would need to be a good amount of information about how the scheme works;
- 62% identified that the refund amount must be high enough to create an incentive; and
- 2% were in favour of other methods.

### 11.5.2 Consumer Attitudes Towards the Deposit Value

More than half (58%) of those surveyed were supportive of a deposit value of up to NZD20-cents. 13% said they would participate even if the deposit value was NZD0-cents, 31% were supportive of a NZD5-cent to NZD10-cent value, and 27% of a NZD15-cent to NZD20-cent value. 23% of people were supportive of deposit values greater than NZD20-cents. The survey found that there was no obvious relationship between different household incomes and the types of responses on the deposit value.

Besides the preference to use kerbside recycling, the main reason for opposition to the NZ CRS was uncertainty about the additional costs of the scheme. In the survey undertaken in June 2020, of the 15% were opposed to a NZ CRS, 65% were uncertain about paying a non-refundable administration fee, and 50% were uncertain about paying a refundable deposit fee. Similarly of those who were undecided, 49% were uncertain about paying the non-refundable administration fee. Most of the responders who were not in favour of the non-refundable administration fee were people aged 60 or over and those earning NZD\$150,000 or above.

In relation to methods of receiving the refund amount, the most popular refund type was cash, with 40% being in support of cash refunds. Following cash, 21% were in favour of payment to bank accounts. A small percentage preferred vouchers or donations to charities (Figure 34).



**Figure 34: Support for the type of deposit refund method**

Most of the members surveyed think transparency of scheme costs is important and would like the fees printed on their receipts. When surveyed about the deposit value being shown on receipts, 56% thought this was very important and 13% thought it was somewhat important. When surveyed about the administration fee, 48% thought it was very important, and 14% thought it was somewhat important to show the fee on the receipts. In relation to additional scheme costs, 69% thought it was very important and 12% that it was somewhat important for extra costs to be transparent. The majority of those in

support of seeing the costs of the scheme were those who support the scheme, women, and those aged 60 or over. Men were less likely than average to believe that cost transparencies were important.

## 11.6 Handling Fee

A commonality between all global container return schemes is the need for collection and sorting of scheme eligible containers whereby retailers and/or collection depots are responsible for handling (collecting, sorting and packaging) empty containers which are then transported to the materials processor or direct to the container manufacturer. A handling fee is used to compensate these collection facilities and is generally paid by the agency tasked with managing the scheme. The handling fee component of a container return scheme design is an integral component as the fee covers investment in collection technology (e.g., RVMs), electricity costs, collection site requirements (e.g., storage) and the cost of personnel to handle the containers (e.g., retailers that use RVMs that do not compact eligible scheme containers). Generally, it is the beverage producer that commonly pays both the deposit and the handling fee per container to the scheme Managing Agency. It is then, as mentioned above, the responsibility of the scheme Managing Agency to pay the respective collection facility the handling fee.

Under the Norwegian scheme handling fees are paid to retailers as compensation for handling, receiving and storing used beverage containers, however the amount of the handling fee depends on whether containers are compacted or sorted manually (i.e., collected by an RVM but requires store staff to sort and bag segregated materials). Retailers that incorporate a compacting RVM are paid a higher handling fee than retailers that manually sort containers as the higher fee reflects the transport efficiencies generated by compacting the containers and that compaction at the RVM is reported to reduce the opportunity for fraudulent claims (e.g., collector or sorter passing already redeemed containers back through the RVM). Further, handling fees differ by material type with, for example, retailers collecting aluminium cans via RVM compaction receiving a handling fee of NOK0.20 (equivalent to NZD3-cents) with retailers collecting can via manual collection receiving NOK0.05. Similarly, retailers are paid NOK0.25 for compacted plastic containers collected via RVM and NOK0.10 for manually collected plastic containers. The application of a differential handling fee by material type and/or by method of container collection is also seen in other European container deposit schemes including Croatia, Denmark, Finland, Lithuania and Sweden. Where handling fees are not part of the scheme design, as in Germany, the retailer is compensated through ownership of the collected material<sup>695, 696, 697, 698</sup>. Similarly, where handling fees are not reported, such as in Australia, this is predominantly due to the rates being commercially sensitive and established through negotiation with the Scheme Coordinator or between the producer and the Supercollector/SuperMRF.

Additionally, information regarding the application of jurisdictional specific tax (e.g., Value Added Tax [VAT] or Goods and Services Tax [GST]) to the handling fee was limited, however Croatia was reported to include 25% VAT on the scheme handling fees (i.e., RVM accepted containers HRK0.12, manually accepted containers HRK0.10) with Estonia<sup>699</sup> charging VAT on the scheme handling fees (Appendix C).

Across the Americas, generally a differential handling fee based on material or brand type and/or collection methodology is paid by the deposit initiator to the retailer or collection depot (Appendix C).

<sup>695</sup> How a Deposit Return System will complement Ontario's Blue Box Program and Enhance the Circular Economy, 2019

<sup>696</sup> Reuse and Recycling Systems for Selected Beverage Packaging from a Sustainability Perspective, 2011

<sup>697</sup> Review of Packaging Deposits System for the UK, 2008

<sup>698</sup> Best Practice International Packaging Approaches, 2011, Martin Stewardship and Management Strategies Pty Ltd

<sup>699</sup> Deposit Systems for One-Way Beverage Containers Global Overview: 2018



Where no handling fee is paid as in Michigan<sup>700</sup>, 25% of the unredeemed deposits are available to retailers to cover the costs of handling the eligible materials.

Appendix C provides a list of handling fees reported from across 38 global container return schemes as at 2017.

### 11.6.1 Queensland Case Study

Under the Queensland container return scheme, beverage suppliers are required to pay the costs of running the scheme to Containers for Exchange (COEX) for each container sold. The scheme costs include the AUD10-cent deposit amount plus a component that covers other scheme costs, including<sup>701</sup>:

- A handling fee
  - This fee is paid to container return points for the collection of empty eligible containers
- Costs associated with transport and processing containers for recycling markets
  - This fee is paid to logistics and processing service providers
- The costs of COEX administering the scheme

The amount a beverage supplier has to pay into the Queensland scheme is based on the number of containers of each material type it has sold in the previous month, multiplied by the scheme price as set by COEX. It should be noted here that the Queensland scheme price differs depending on the beverage container material type. Table 22 sets out the Queensland scheme container scheme costs reported from 01 November 2018<sup>702</sup> which shows that the direct (costs involved in collection, baling and container transportation and administering the scheme) per container costs (of the Queensland scheme range between AUD4.59-cents (aluminium) to AUD5.36-cents (HDPE and LPB) with the total scheme price (including GST) per container ranging between AUD10.90-cents (aluminium) and AUD11.70-cents (HDPE and LPB). The differential or assumed indirect costs (including the handling fee) then ranges between

AUD6.31-cents (aluminium) and AUD6.34-cents (HDPE and LPB) (including GST). Subsequently, the direct scheme costs for the period 01 November 2018 to 30 April 2019 per container (including GST) was AUD4.92-cents with a total scheme price per container (including GST) of AUD11.2-cents; greater than the AUD10-cent deposit value. As a result, the total costs of the scheme were reported to have been passed through to the consumer.

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*The handling fee component of a container return scheme design is an integral component as the fee covers investment in collection technology (e.g., RVMs), electricity costs, collection site requirements (e.g., storage) and the cost of personnel to handle the containers*

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Of note, the final report issued by the Queensland Productivity Commission reported that the weighted average cost per container was increased from AUD10.2-cents (excluding GST) per eligible container to AUD11.6-cents (excluding GST) on 01 November 2019. The report also notes that this cost may need to increase further as the proportion of returned containers (assuming an AUD10-cent deposit) increases<sup>703</sup>.

<sup>700</sup> <http://www.bottlebill.org/index.php/current-and-proposed-laws/usa/michigan>

<sup>701</sup> Container Refund Scheme Price Monitoring Review: Interim Report 2019

<sup>702</sup> Container Refund Scheme Price Monitoring Review: Interim Report 2019

<sup>703</sup> Container Refund Scheme Price Monitoring Review: Final Report 2020

Table 22: Queensland container scheme costs, from 01 November 2018<sup>704</sup>

	Total scheme price per container excluding GST (AUDcents)	Total scheme price per container including GST (AUDcents)	Direct scheme cost per container including GST (AUDcents)	Scheme price per container excluding GST (AUDcents) <sup>705</sup>
Aluminium	9.90	10.90	4.59	11.2
Glass	10.50	11.60	5.25	11.9
HDPE	10.60	11.70	5.36	11.9
PET	10.30	11.30	5.03	11.8
LPB	10.60	11.70	5.36	12.1
<b>Weighted average cost per container</b>	<b>10.20</b>	<b>11.20</b>	<b>4.92</b>	<b>11.6</b>

## 11.7 Logistics

Typically, logistics as included in a container return scheme involves the transportation of eligible containers from the point of consumer return (e.g., manual depot, RVM, return-to-retail) to the material consolidation facility, and then on to end markets.

As has been discussed in previous Sections, the transport of materials can vary depending on the scheme design but may include management by the scheme Managing Agency whereby contracts with logistics providers are entered into, the Managing Agency utilises their own transportation fleet, or third party logistics providers service collection depots or processors. While each arrangement has their own unique attributes, generally, the cost of logistics in a container return scheme can represent a large cost of the scheme operational finances.

Another important consideration when determining scheme logistic arrangements and associated costs is the price impact variation depending on metropolitan versus regional/remote areas and transport preferences depending on container type and volume (e.g., higher proportion of glass versus compressed plastic bottles).

In Norway, the Managing Agency, Infinitum, employs RVMs that compress containers so that they take up less space when transported to the Infinitum processing facility. To achieve this, Infinitum utilises empty space on trucks that have delivered goods and are returning to the wholesaler's warehouse to reduce additional transportation costs and to assist in reducing the schemes carbon footprint profile. In the 2018 financial year, Infinitum reported total scheme transportation related costs to be NOK('000)114,929, a slight increase from NOK('000)105,813 in 2017<sup>706</sup>.

An evaluation of the Northern Territory scheme (Australia) noted that among the collection depot operators, 67% reported high costs associated with transportation. However, at the same time, coordinated efforts between depot operators, transport companies, community members were reported to help reduce these costs by providing back-loading of trucks and barges to return eligible containers from remote Northern Territory communities<sup>707</sup>. No financial information was available at the time of writing to indicate the level of transport investment required in the scheme.

<sup>704</sup> Container Refund Scheme Price Monitoring Review: Interim Report 2019

<sup>705</sup> Container Refund Scheme Price Monitoring Review: Final Report 2020

<sup>706</sup> Infinitum Annual Report, 2018

<sup>707</sup> Evaluation of the Operation of the Northern Territory Container Deposit Scheme, 2018

In Denmark, importers and producers must pay a logistics fee to the Managing Agency, Dansk Retursystem. The logistics fee is reported to be set according to the material and the volume and covers administrative overheads and efficiency improvements in supermarkets. The invoicing of logistics fees under the Danish scheme is based on quantities sold to stores with the funds used for the administration of the payment to stores. Further, the Dansk Retursystem has commitments to reduce the impact of scheme activities (including logistics) on climate change and reported in the 2018 the integration of 14-CO<sub>2</sub> efficient trucks designed to empty and wash the containers, meaning containers are cleaned on-route to their final destination for processing (a reported 25% CO<sub>2</sub> emission reduction on 2016 transport figures)<sup>708</sup>.

In Quebec, Canada, approximately 70% of the empty eligible containers are collected through RVMs with the distributor (required to collect returned containers) using dedicated transport contracted by the distributor. In comparison, approximately 30% of the empty returned containers are collected by the empty trucks that have delivered goods to the store via a back-haul arrangement (i.e., reverse logistics)<sup>709</sup>.

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*The Dansk Retursystem has commitments to reduce the impact of scheme activities on climate change and reported in the 2018 the integration of 14-CO<sub>2</sub> efficient trucks - a reported 25% CO<sub>2</sub> emission reduction on 2016 transport figures*

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In addition to maximising transport efficiencies by methods such as contracting third parties and utilising back-haul arrangements, the NZ CRS scheme Managing Agency will need to ensure strict anti-fraud measures are put in place (e.g., contractual obligations, auditing and verification, reporting) to closely monitor and assess the performance of the logistics companies involved in the scheme. Where the scheme Managing Agency does not retain oversight and/or control of the logistics companies (e.g., collection depots/processors arrange individual logistics contracts), the Managing Agency risks increased fraudulent activities due to lack of data transparency. Fraud is further discussed in Section 11.10.

## 11.8 Unredeemed Deposits

As reported earlier in this section, the total value of unredeemed deposits is linked to the deposit value and container return rates particularly in the early stages of a deposit scheme. Unredeemed deposits (or unclaimed deposits) are deposits that were paid on the container, but the containers were not redeemed through the scheme (e.g., kerbside refuse collections, disposal to landfill, litter stream).

This is because return rates are difficult to predict and may fluctuate based on factors, such as, consumer education and understanding of the scheme, consumer access to conveniently located return facilities and consumer understanding of the types of eligible containers. This also influences the cost of collection and recycling the returned containers, however over time (i.e., 2-3-years is the timeframe commonly reported as the period when a newly established scheme will reach consistent results) these rates are expected to become consistent due to consumer uptake and integration into day-to-day behaviours. Further, the total value of the unredeemed deposits collected will also be influenced by the value of collected material sold on the commodity markets.

Across the global container return schemes, the revenue generated from unredeemed/unclaimed container refunds is reported to directly or indirectly support funding of the respective scheme<sup>710</sup>. This is achieved through the beverage industry (where the beverage industry manages the scheme) retaining and using unredeemed/unclaimed container refunds to cover their costs or the government may take ownership of these funds. In some cases, the value of material recycle has been reported to also fund the operation of the scheme, but while no case study was provided, it is probable that this scenario would occur where the relevant scheme Managing Agency had overall or shared ownership (e.g., shared ownership with the scheme MRF) of the scheme material (e.g., Queensland, Australia). However, most container return schemes also have additional fees to assist with funding the scheme (including handling

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<sup>708</sup> Dansk Retursystem Annual Report, 2016

<sup>709</sup> Who Pays What: An analysis of beverage container collection and costs in Canada, 2012

<sup>710</sup> Deposit Systems for One-Way Beverage Containers Global Overview: 2018

expenses associated with the recovery of materials) such as Container Recycling Fees as applied in Alberta Canada (see Section 11.9 for further discussion).

As discussed in Section 7, Queensland MRFs are required to enter into a 50/50 revenue sharing arrangement with the local council with which the MRF has a recycling agreement with and in order to receive a refund for the eligible containers they process. Both parties must enter into a recovery amount agreement detailing how refunds will be shared and where no agreement is in place no refunds will be paid to the MRF.

Similarly, in Germany (see Section 9.2.1.4 for further information), unredeemed deposits end up with the deposit account holder, which can be producers<sup>711</sup>. In California, unredeemed deposits have been used to offset processing fees paid by producers<sup>712</sup>.

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*The establishment of container return schemes, the eligible scheme material is effectively allocated a financial value that in most cases is more than its material value*

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In the recently established (2020) Scottish deposit return scheme (DRS), the scheme requires producers (i.e., defined as those companies that put eligible scheme containers onto the market) to be responsible for the full costs of the implementing and operating the scheme. However, the unredeemed deposits, material value are retained by the Scheme Administrator and supplemented by a producer fee to cover running costs of the DRS and to provide an incentive to maximise the quality of materials collected by the scheme<sup>713</sup>.

In Denmark, the Dansk Retursystem has reported<sup>714</sup> that approximately 10% of all eligible bottles and cans sold are not returned, with the unclaimed deposits contributing to the running of the scheme. Further, where the Dansk Retursystem collects unclaimed/unredeemed deposits these are to be recorded as income in accordance with the Deposits Order and are to be paid out by the Dansk Retursystem Board for public good (e.g., establishment of environmental measures, education, information, research and other relevant environmental projects<sup>715</sup>). Where there are unclaimed/unredeemed deposits available after, for example, the Dansk Retursystem has paid the State, repaid deposits and covered scheme administration and operational costs, these funds can be paid to, for example, persons, funds, institutions, public bodies and associations<sup>716</sup>.

## 11.9 Advanced Material Recycling Fee

As discussed in Section 3 to Section 6, the application of an Advanced Material Recycling Fee (AMRF) within a NZ CRS recognises that not all container packaging materials are equal with some more recyclable and valuable than others. In practice this means that materials that are difficult to recycle or problematic such as liquid paperboard may need to incur additional cost to see them successfully recycled in keeping with the outcomes of the NZ CRS design while other materials may receive a net income such as aluminium. Approaching this in an open and transparent way will ensure container material choices by beverage producers are recognised and reflects any net cost or revenue that is

<sup>711</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

<sup>712</sup> Sound Resource Management Group, City of Tacoma and Green Solutions, 2005, Economic & Environmental Benefits of a Deposit System for Beverage Containers in the State of Washington.

<sup>713</sup> A Deposit Return Scheme for Scotland: Final Business Regulatory Impact Assessment 2020

<sup>714</sup> <https://www.danskretursystem.dk/en/about-dansk-retursystem/funding/>

<sup>715</sup> Denmark Order on deposits on and collection, etc. of packaging for some beverages. Directive 94/62/EC of 20 December 1994 of the European Parliament and the Council on packaging and packaging waste, OJ 1994, No L 365, p. 10, as last amended by Commission Directive 2013/2/EU of 7 February 2013, OJ 2013, No L 37, p. 10. The law has been notified as a draft in accordance with Directive 98/34/EC of the European Parliament and of the Council (the Information Procedure Directive) as amended by Directive 98/48.

<sup>716</sup> Denmark Order on deposits on and collection, etc. of packaging for some beverages. Directive 94/62/EC of 20 December 1994 of the European Parliament and the Council on packaging and packaging waste, OJ 1994, No L 365, p. 10, as last amended by Commission Directive 2013/2/EU of 7 February 2013, OJ 2013, No L 37, p. 10. The law has been notified as a draft in accordance with Directive 98/34/EC of the European Parliament and of the Council (the Information Procedure Directive) as amended by Directive 98/48.

expected to ultimately be passed on to the customer. Also, in keeping with the outcomes of the NZ CRS design, the non-financial impacts associated with container material choice must be factored in or at the very least provided for to help shape the direction, drive positive change and choice of container material in the future. The AMRF provides the mechanism to achieve this.

Table 23 below shows example calculations for various materials noting the prices are examples only and will depend on actual market values and actual weight of beverage containers.

**Table 23: Example application of Advanced Material Recycling Fees by material type**

	Material Type			
	Plastic	Liquid Paperboard	Aluminium	Glass
Average weight/container	0.0413	0.0998	0.0165	0.2695
(kg) number of containers per tonne	24,230	10,024	60,770	3,711
net value per tonne	\$200	\$(180)	\$1,250	\$75
value per container	\$0.008	\$(0.018)	\$0.021	\$0.020

Application of the AMRF will reduce or increase the net amount paid by beverage producers in addition to the scheme fee. For example, if the scheme fee is set at NZD8-cents then this will reduce by NZD2.1-cents for aluminium containers but will increase by NZD1.8-cents for liquid paperboard.

Determination and criteria of which materials are considered difficult to recycle and therefore incur the AMRF would be determined (including appropriate review periods) by the scheme Managing Agency. Scheme material that has established recycling markets (e.g., aluminium) would not incur the AMRF, until such time as determined by the Managing Agency (i.e., AMRF review period). The criteria and process for applying the AMRF would follow the steps below by determining:

1. If markets or technology exists to accept recovered material and turn this into materials or products that can be beneficially used for which there is a market.
2. The cost associated with achieving 1 above including transport, any additional sorting and re-processing and/or infrastructural investments required.
3. Level of revenue paid for material.
4. The difference between revenue and cost is covered by the AMRF.

*Scheme eligible containers need to include a specific scheme logo which are applied in a way so as to minimise fraud (e.g., labels printed directly on to the container or a self-adhesive label applied by the beverage producer)*

Recycling of containers made from Liquid Paperboard (LPB) is an example of a material that is likely to benefit from the AMRF.

In addition to the AMRF, some European schemes include a financial incentive for industry to achieve high rates of return for eligible scheme containers alongside the consumer focussed deposit incentive to return empty eligible containers. The following Norwegian case study provides an overview of how the scheme uses the deposit and the levies (i.e., basic tax and environmental tax) to achieve a scheme return rate of 95%; one of the highest return rates reported from the global container deposit schemes.

### 11.9.1 Norwegian Case Study

To encourage the Norwegian Scheme Coordinator, Infinitum, a financial incentive operates alongside the scheme to ensure high return rates of eligible scheme containers. Norway legislation includes an environmental tax on non-refillable (i.e., single-use) containers which is taxed at a variable rate by the

government and payable by the beverage supplier to cover the cost of recycling the packaging. The environmental tax is adjusted based on the rate of containers returned, where if the return rate is greater than 25% the environmental tax is reduced on a sliding scale to a zero rate if the return rate reaches 95%<sup>717</sup>. Consequently, the application of the environmental tax can be viewed as a reward system for beverage manufacturers whereby the higher the return rate for eligible materials the lower the tax on the beverage. Under the Norwegian scheme, recyclable bottles and cans are subject to two (2) different taxes:

- Basic tax
  - The basic tax is set at NOK1.23 per bottle or can and is consistent irrespective of the return rate.
- Environmental tax
  - The environmental tax is set at NOK5.99 for cans and NOK2.62 for recyclable bottles. As discussed above the environmental tax is linked to the return rate starting at 25% and decreasing to zero at a 95% return rate. The basic tax continues to be charged even if the return rate is greater than or equal to 95%.

Under the Norwegian container deposit scheme, the deposit applied to eligible containers motivates consumers to return the packaging and receive the appropriate refund, however it is the above levies (i.e., basic tax and environmental tax) that motivate the industry to ensure efficient collection systems are put in place (i.e., installation of reverse vending machines) to collect the returned empties.

Alongside this is the Norwegian governments initiative to encourage the circular use of these recycled materials in the production of new containers. As at 2018, only 10% recycled materials are used in the production of new bottles. To encourage producers to use a greater percentage of recycled content in the production of new containers, the European Union in 2019 formally adopted specific targets outlined in the European Strategy for Plastics in a Circular Economy<sup>718</sup>, which include the following key targets which are expected to influence the Norwegian container deposit scheme:

- Plastic bottles in the European Union will contain at least 30% recycled content by 2030; and
- 90% collection target for plastic bottles by 2029.

Further, one of the key goals of European Union Plastic Strategy is to ensure there is a market for recycled material and to do this the European Union has set long-term requirements for material recycling including reporting to ensure more recycled plastic will be used in production. The relationship and potential influence that the European Union Plastic Strategy may have on container return schemes will be further discussed in Section 12.

Consequently, in order to increase the use of recycled material (e.g., plastic) in the production of Norwegian containers, Norway has reported the potential implementation of a levy on new plastic that decreases in line with the percentage of recycled material used<sup>719</sup>.

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*Norway legislation includes an environmental tax on non-refillable (i.e., single-use) containers which is taxed at a variable rate by the government and payable by the beverage supplier to cover the cost of recycling the packaging*

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*It is critically important that the scheme Managing Agency ensure secure arrangements are put in place along this pathway to eliminate fraudulent activity*

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## 11.10 Fraud

With the establishment of container return schemes, the eligible scheme material is effectively allocated a financial value that in most cases is more than its material value (e.g., scrap aluminium). Therefore,

<sup>717</sup> Evaluation of the Operation of the Northern Territory Container Deposit Scheme, 2018

<sup>718</sup> A European Strategy for Plastics in a Circular Economy, European Commission

<sup>719</sup> Infinitum Annual Report 2018

the entity responsible for operation and management of the scheme needs to have in place monitoring and enforcement procedures to prevent fraudulent activity and claims.

As has been touched on in Section 11.7, fraud is a tangible risk for any container return scheme and may include situations whereby a collection contractor might collect uncompacted containers from an automated return facility such as an RVM and pass these back through the machine to redeem the refund. Where RVMs are used that compact and/or crush the containers (e.g., aluminium cans, plastic bottles), the container is 'destroyed' so that the container nor unique identification scheme logo cannot be re-read by the RVM.

Similarly, where schemes utilise manual collection facilities, including collection depots, automated container counting and verification helps to identify fraudulent activity and ensure that payment is only provided on eligible scheme material. To help achieve this, scheme eligible containers commonly include a specific scheme logo which are applied in a way so as to minimise fraud (e.g., labels printed directly on to the container or a self-adhesive label applied by the beverage producer)<sup>720,721,722,723,724</sup>.

Examples of fraudulent activities may include:

- Photocopying or production of fake barcodes, labels and deposit vouchers;
- Manufacture of fake containers for a deposit refund;
- Retailers and/or processors trying to claim extra handling fees;
- Consumer or shop staff feeding containers through twice; and
- Container collectors feeding containers through RVMs twice.

It is important to note here that any intact eligible container can be stolen and have its deposit value refunded again at any point between initial collection at a depot to the point where the container is processed and/or recycled. In some schemes, the pathway between these points can be complex and include a range of parties involved in the handling of the container. Consequently, it is critically important that the scheme Managing Agency ensure secure arrangements are put in place along this pathway to eliminate fraudulent activity. Where possible, the integration of technology (e.g., QR code) in a container return scheme is recommended to ensure the accurate capture of return rates in order to facilitate the correct refund payments are made and to ensure fraudulent activities are minimised. For example, in Ontario, Canada, the container return scheme includes a specific scheme deposit label with an additional barcode that is registered with the Managing Agency and which is scanned by the RVM or at the counting centre. This record of barcodes provides a safeguard for the Managing Agency and allows fraudulent activity to be tracked and appropriately managed if required<sup>725,726,727,728,729</sup>.

The following non-exhaustive list provides several options for integration in a container return scheme so as to reduce or eliminate fraudulent activity:

- Application of special labelling ink (e.g., Denmark and Germany) in order to eliminate fraud from the copying of barcodes.
- RVMs to puncture, crush or compact cans and plastic bottles.

<sup>720</sup> Review of Packaging Deposits System for the UK, 2008

<sup>721</sup> Who Pays What: An analysis of beverage container collection and costs in Canada, 2012

<sup>722</sup> Evaluation of the Operation of the Northern Territory Container Deposit Scheme, 2018

<sup>723</sup> A Deposit Return Scheme for Scotland: Final Business Regulatory Impact Assessment, 2020

<sup>724</sup> Reuse and Recycling Systems for Selected Beverage Packaging from a Sustainability Perspective, 2011

<sup>725</sup> Review of Packaging Deposits System for the UK, 2008

<sup>726</sup> Who Pays What: An analysis of beverage container collection and costs in Canada, 2012

<sup>727</sup> Evaluation of the Operation of the Northern Territory Container Deposit Scheme, 2018

<sup>728</sup> A Deposit Return Scheme for Scotland: Final Business Regulatory Impact Assessment, 2020

<sup>729</sup> Reuse and Recycling Systems for Selected Beverage Packaging from a Sustainability Perspective, 2011

- Manual collection facilities (where no automated verification and counting technology is used) to ensure that counted eligible containers are stored securely to avoid theft and subsequent refund duplication claims.
- The Managing Agency to ensure (e.g., contractually) logistics providers (e.g., third party bulk transportation of containers) have tight security arrangements in place to prevent theft and subsequent refund duplication claims.
- Establishing a reliable and transparent financial management system which is not susceptible to fraud.

The entity ultimately responsible for managing fraud mitigation is generally the agency responsible for managing the scheme (e.g., Managing Agency) including accurate reporting of scheme results, scheme compliance and ensuring the scheme is cost efficient<sup>730,731,732,733,734</sup>.

As has been discussed in previous sections, the Danish scheme, like the Norwegian scheme, is operated by a single entity responsible for determining the scheme design, collecting eligible containers, processing materials, liaising with retailers, setting scheme fees, reporting of scheme data and preventing fraud. The centralised nature of these schemes means the respective Managing Agency has complete oversight and clarity of the scheme mechanics. This enables the scheme to monitor, track and interrogate any possible or potentially fraudulent activity quickly and implement control measures where required.

Across the global container return schemes, several specific examples of fraud have been reported, several of which are included below.

### 11.10.1 Alberta Reclaim and Recycle<sup>735</sup>

The operators of Alberta Reclaim and Recycle were accused of ripping off the Alberta container deposit scheme for more than CAD\$750,000.00 over a 2-year period by cashing in more than 8million cans smuggled in from out of the Alberta province. The fraudulent activity was identified by both immigration officials and the Alberta Beverage Container Management Board as suddenly reports produced in 2011 indicated millions more cans and bottles were flowing through the scheme compared to the expected annual average - on average 1-billion containers are processed annually with approximately 91% returned for the deposit. Further, due to the structure of the Alberta scheme, data for individual depots was available and indicated that Alberta Reclaim and Recycle was suddenly reporting 1000% more returnables. With this reported data, the Alberta Beverage Container Management Board could verify the number of returnables to the average per day returnable rate (i.e., 1,550 returnables) and an understanding of beverage consumption habits. The fraudulent activity carried out by Alberta Reclaim and Recycling involved the organisation travelling to the Yukon territory to purchase thousand-pound bales of crushed cans and assuring the seller that the cans would be recycled and melted down for reuse. However, it was reported that Alberta Reclaim and Recycling would break apart the bales and recover the aluminium cans and return these in Alberta for the CAD10-cent per container refund.

<sup>730</sup> Review of Packaging Deposits System for the UK, 2008

<sup>731</sup> Who Pays What: An analysis of beverage container collection and costs in Canada, 2012

<sup>732</sup> Evaluation of the Operation of the Northern Territory Container Deposit Scheme, 2018

<sup>733</sup> A Deposit Return Scheme for Scotland: Final Business Regulatory Impact Assessment, 2020

<sup>734</sup> Reuse and Recycling Systems for Selected Beverage Packaging from a Sustainability Perspective, 2011

<sup>735</sup> <https://nationalpost.com/news/canada/can-scam-how-alberta-broke-open-what-may-be-the-largest-returnables-fraud-in-canadian-history>



### 11.10.2 Sweden<sup>736</sup>

Scheme eligible containers in Sweden incorporate a barcode and bottle shape recognition verification method, however fraud was reported in imported PET bottles being labelled with barcodes for the SEK2.00 deposit despite the bottles only being eligible for the SEK1.00 deposit.

## 11.11 Reporting

Reporting of clear and transparent scheme related information is important to ensure financial transparency (where appropriate) is provided to relevant scheme participants. Many of the global container return schemes employ an integrated but separate financial accounting system to manage scheme costs including deposit refunds, handling fee payments and management of unredeemed/unclaimed deposits to ensure transparency and auditable records to be maintained and assessed. Additionally, reporting of key performance data by the agency responsible for scheme operations and performance provides greater clarity and transparency on the efficiency of the scheme whilst highlighting areas of improvement, including:

- The proportion of eligible containers returned relative to sale of equivalent containers;
- Rates of recycling of different containers;
- Reduction in types of litter; and
- Carbon emissions from transportation.

Under the New South Wales container return scheme, the Scheme Coordinator Exchange for Change has full financial responsibility with all funds accounted for, reconciled and reported on annually to the government and tabled in parliament. To ensure transparent financial management, independent audits are carried out by the Environment Protection Authority across multiple scheme elements<sup>737</sup>. Further, a review of the New South Wales container deposit scheme undertaken in 2018 by the Independent Pricing and Regulatory Tribunal (IPART), reported the need for greater transparency and reporting of the Network Operator's (i.e., TOMRA Cleanaway) performance and prices but that this decision should be considered by the Environment and Protection Authority. This was further supported by Coca Cola Amatil and the Australian Beverages Council feedback seeking greater transparency on the fees paid to the Network Operator and to ensure that the Network Operator revenue reflected incurred costs<sup>738</sup>. The review also recommended a series of additional measures to improve transparency of scheme financials and contractual arrangements, including:

- The Scheme Coordinator (Exchange for Change) publish its price per container by material type and the associated assumptions in the month prior to costs taking effect.
- The New South Wales Environment Protection Authority publish a summary (e.g., roles and responsibilities and number of collection points within each geographical area) of contractual agreements with the Scheme Coordinator (Exchange for Change) and the Network Operator (TOMRA Cleanaway) (NOTE: the review raised stakeholder concerns regarding the appointment of a single Network Operator and TOMRA Cleanaways partnership with particular retailers to roll out RVMs [e.g., Woolworths]).

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*Both the MRF and local council benefit from revenue generated from the eligible containers received via kerbside recycling collection service. The value of the recyclate material is influenced by factors including the quality of the materials received (i.e., contamination), the ability for the MRF to separate the materials, the recyclability of the material and the availability of end-markets*

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<sup>736</sup> Review of Packaging Deposits System for the UK, 2008

<sup>737</sup> <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/return-and-earn/how-return-and-earn-works/scheme-financial-structure>

<sup>738</sup> Independent Pricing and Regulatory Tribunal. New South Wales Container Deposit Scheme Monitoring the impacts on container beverage prices and competition, 2018

As discussed in Section 11.6, across the global container return schemes, it is commonly the beverage producer that pays both the deposit and the handling fee per container to scheme Managing Agency. It is then the responsibility of the Managing Agency to pay the respective container return facility the handling fee. Therefore, to ensure handling fees accurately reflect the costs incurred by scheme participants responsible for handling empty containers, handling fees should be regularly reviewed, revised and reported in a transparent manner and underpinned by independent auditing and verification.

## 11.12 Container Return Scheme Cost Benefit Analysis

Social cost-benefit analysis (CBA) is a technique that produces a clear understanding of the economic (resource) costs and benefits of particular proposals (i.e., whether society will be better off (or not) from having a NZ CRS in place). CBA is valued by policymakers as the results of CBAs are readily comparable across a range of policy and industry areas, enabling comparison (and prioritisation) of initiatives in a manner that is consistent and coherent.

To support the development of the NZ CRS design, a CBA was undertaken by Sapere Research and both the methodology used and findings peer-reviewed by Sense Partners (Appendix I).

The purpose of undertaking the CBA for the NZ CRS Design was to determine what the economic costs and benefits of the design are over a 30-year period should the NZ CRS design be adopted and implemented. Also included in the CBA analysis was the impact of any change in the carbon emissions associated with the introduction of the NZ CRS. While it is not the intent to discuss the CBA analysis in its entirety, the following bullet points highlight the key findings (the CBA report is included in full in Appendix I):

1. Compared to business as usual of no NZ CRS and a deposit of NZD20-cents and container return rate of 85%, a scheme that includes glass beverage containers would result in Aotearoa New Zealand's society being better off by NZD\$1,101million in present value (PV) terms. This would see benefits exceed costs by 49%. At a deposit of NZD10-cents and container return rate of 75% this would reduce from NZD\$1,101million to NZD\$265million, a difference of \$836million.
2. If glass beverage containers were removed from the NZ CRS then, under the NZD20-cents deposit/85% return rate the net benefit to NZ society reduces from NZD\$1,101million to NZD\$81million, a difference of NZD\$1,020million in present value (PV) terms. At the NZD10-cents deposit/75% return rate the net benefit to society reduces from NZD\$265million to NZD-\$233million, a difference of NZD\$498million.
3. A summary on the impact of including or excluding glass in the NZ CRS are provided in Table 24 below:

**Table 24: Findings of the Cost-Benefit Analysis focussing on glass in/out of the New Zealand Container Return Scheme under a 20-cent deposit and 10-cent deposit**

20-cents deposit 85% container return rate	Glass included in the NZ CRS (over a 30-year period)	Glass not included in the NZ CRS (over a 30-year period)
Total benefits (\$m, PV)	\$3,329	\$1,271
Total costs (\$m, PV)	\$2,227	\$1,190
Net benefits (\$m, PV)	\$1,101	\$81
<b>Benefit-Cost ratio</b>	<b>1.49</b>	<b>1.07</b>

<b>10-cents deposit 75% container return rate</b>	<b>Glass included in the NZ CRS (over a 30-year period)</b>	<b>Glass not included in the NZ CRS (over a 30-year period)</b>
Total benefits (\$m, PV)	\$2,325	\$878
Total costs (\$m, PV)	\$2,061	\$1111
Net benefits (\$m, PV)	\$265	-\$233
<b>Benefit-Cost ratio</b>	<b>1.13</b>	<b>0.79</b>

- The implementation of the NZ CRS will reduce current greenhouse gas emissions. The value of this is between NZD\$35million and NZD\$37million for a NZ CRS that includes or excludes glass, respectively (at the NZD20-cents deposit level).
- The removal of beverage containers (including glass in the NZ CRS) from kerbside refuse and recycling collections will reduce kerbside collection costs by NZD\$168million. If glass containers are excluded, then the kerbside collection cost savings will reduce from NZD\$168million down to NZD\$35million (at the NZD20-cents deposit level).
- Avoided landfill costs represent a saving of NZD\$29m (including glass in the NZ CRS). This saving will reduce to NZD\$14million if glass is excluded from the NZ CRS (at the NZD20-cents deposit level).
- Reduced litter clean-up costs (savings) are NZD\$63.5million with glass in the NZ CRS and NZD\$20million without glass in the NZ CRS (at the NZD20-cents deposit level).

The reader is referred to Appendix I for the full CBA report and associated detailed analysis.

## 11.13 Impact of Container Return Schemes on Kerbside Recycling

Assessing the impact of a container return scheme on kerbside recycling collections, and by association, the related impact on a Material Recovery Facility (MRF), is a complex matter. Alongside the scheme design, a range of externalities (e.g., commodity markets, consumer behaviour) can influence how the scheme operates alongside existing kerbside recycling services. Where information was available from across the range of global container return schemes, this section discusses the potential high-level impacts to kerbside recycling collections and MRFs.

As discussed in Section 4, the return rate and where eligible scheme containers are returned to (e.g., RVMs, return-to-retail, manual collection depot) is influenced by a range of factors including scheme marketing and education, to a consumers understanding and/or choice of how and where to return their eligible containers. In the latter case, consumers typically either return eligible containers to a scheme collection facility to receive their appropriate refund or to put the containers in their kerbside recycling bin for collection and latter processing by a MRF and therefore will not receive their refund. While the consumer does not receive the refund, in New South Wales, MRFs and the local council must enter into a revenue sharing arrangement for those unredeemed/unclaimed deposits (i.e., eligible scheme containers). In this case both the MRF and local council benefit from revenue generated from the eligible containers received via kerbside recycling collection services (see Section 7 for further information). With regards to the MRF, the value of the recyclate material is influenced by factors including the quality of the materials received, the ability off the MRF to separate the materials, the recyclability of the material and the availability of end-markets (see Section 7 and Section 8 for further discussion on the material end-markets). As reported by the South Australian Environment Protection Authority, the container deposit scheme has meant that with less glass containers in the kerbside collection, contamination of other recyclable materials is reduced which has led to an increase in truck compaction (200kg/m<sup>3</sup> compared to New South Wales with a compaction rate set between

120kg/m<sup>3</sup> – 140kg/m<sup>3</sup>) allowing for more material to be collected and a reduction in the number of collection trips<sup>739</sup>.

While implementation of a container return scheme is likely to provide MRFs and councils with revenue from unredeemed/unclaimed deposits, this must be considered in the overall context where the amount of recyclable material entering a MRF from kerbside collections is likely to decrease as consumers seek to redeem the deposit value. However, the impact of any changes in recyclable material entering a MRF is also dependent on the MRFs broader commercial arrangements and their ability to offset the loss of kerbside material with other sources of recyclable material.

Where information was available, container return schemes are likely to result in a change in the amount of materials (including those valuable materials such as PET) processed by a MRF as these materials are redeemed at collection points. Alongside a change in material quantities entering the MRF, the MRF may also consequently see a change in financial revenues including a reduced amount of gate fees collected and may reduce the amount of material a MRF can sell to commodity markets. However, as already noted, MRFs may also see an increase in revenues associated with revenue sharing arrangements.

Alongside the potential reduction in material volumes entering a MRF, savings may also be realised by councils through reduced kerbside collection costs and extended landfill life<sup>740</sup>. The associated cost savings from across a range of container return schemes have been published<sup>741</sup> in several reports with a summary of selected reported schemes provided below:

- New South Wales<sup>742</sup>
  - Avoided waste collection and transport costs: benefits transferred from local government to customers are estimated to be AUD\$272M over a 20-year period.
- Tasmania<sup>743, 744</sup>
  - From 2014/15 to 2034/35 a container return scheme would benefit local government by AUD\$28M Net Present Value (NPV) (AUD\$54,139 per 1,000 population through receipt of refunds on collected material and avoidance of some costs associated with existing kerbside recycling).
  - Reduced collection costs: AUD\$257,000/year (AUD\$1.31/service/year) (AUD\$497 per 1,000 population).
  - Reduced processing costs: AUD\$340,000/year (AUD\$1.73/service/year or AUD\$8.70/tonne) (AUD\$657 per 1,000 population).
  - Reduced litter management costs: AUD\$160,000/year.
- New Zealand<sup>745, 746</sup>
  - Councils could expect to save NZD\$12.5M - NZD\$20.9M/year in collection costs (NZD\$2.645 to NZD\$4,424 per 1,000 population).
  - Reduced litter collection and public space maintenance costs: NZD\$2.9M - NZD\$4.4M (NZD\$614 to NZD\$931 per 1,000 population).

<sup>739</sup> [https://www.epa.sa.gov.au/environmental\\_info/container\\_deposit/faqs#kerb](https://www.epa.sa.gov.au/environmental_info/container_deposit/faqs#kerb)

<sup>740</sup> Container Deposit Scheme Decision Regulation Impact Statement, Transport Canberra and City Services Directorate, 2018

<sup>741</sup> Deposit Return System: Studies confirm big savings to municipal budgets. Fact Sheet. Reloop. 2019

<sup>742</sup> Consultation Regulation Impact Statement – New South Wales Container Deposit Scheme, NSW Environment Protection Authority, 2019

<sup>743</sup> Cost Benefit Study of Tasmanian Container Deposit System, Marsden Jacob Associates, 2014

<sup>744</sup> An Assessment of the Potential Financial Impacts of a Container Deposit System on Local Government in Tasmania, Equilibrium, 2013

<sup>745</sup> Cost-Benefit Analysis of a Container Deposit Scheme, Sapere Research, 2017

<sup>746</sup> The Incentive to Recycle: The Case for a Container Deposit System in New Zealand, Envision, 2015

- Reduced landfill disposal costs: NZD\$1.3M - NZD\$3.7M (NZD\$275 to NZD\$866 per 1,000 population).
- Refuse collection savings: NZD\$26.7M/year to NZD\$40.1M/year (NZD\$5,918 to NZD\$8,887 per 1,000 population).
- Reduced kerbside collection costs up to NZD\$19.26/household/year.
- Scotland<sup>747</sup>
  - Reduced revenue from sale of materials and increased sorting costs as a consequence of valuable materials being removed - £46.3M.
  - Savings from handling reduced tonnages, lower disposal costs and waste litter collection efficiencies - £237.5M.
  - Overall net benefit to local authorities - £191.1M.
- Czech Republic<sup>748</sup>
  - Municipalities will save at least €113,000 (if only PET is included in the container return scheme) or €250,000 (if the container return scheme includes PET and metal) in disposal costs. These savings could increase to €345,000 (PET container return scheme) or €768,000 (PET and metal container return scheme) if the landfill tax was increased or a landfill ban was introduced.
  - Municipalities are likely to share some of the €6,949,000 (PET container return scheme) or €7,009,000 (PET and metal container return scheme) collection cost savings.

## 11.14 The Aotearoa New Zealand Context

As has been discussed throughout previous sections, container return schemes are underpinned by scheme financials and strong scheme governance (see Section 14 and Section 15 for further discussion) and therefore are considered an integral and critically important process underpinning the success of a scheme and the ability for scheme participants to effectively engage in the scheme.

For the purpose of clarity and as stated in the introduction to Section 11, there are a range of scheme participants involved in the NZ CRS, including:

- The Consumer (refer to Section 6);
- Container Return Facilities (refer to Section 4);
- The Retailer (refer to Section 5);
- Material Processing Facilities (refer Section 7);
- The Material Re-Processor (refer to Section 8);
- The Container Manufacturer (refer to Section 9);
- The Beverage Producer (refer to Section 10); and
- The scheme Managing Agency (see Section 14).

Each of the above listed scheme participants are actively involved in the scheme financials with varying roles and responsibilities depending on the activity and/or interaction (e.g., provision of collection and/or processing capabilities) provided to the NZ CRS. It is also acknowledged that the NZ CRS does not require or expect the beverage industry to fund the scheme. The cost of funding of the NZ CRS has been built into the NZ CRS financial model and based on commercial terms. Further, the Project Team is mindful that the beverage industry may put forward or seek to influence the control and management of the scheme (i.e., Governance Board make-up) by funding the scheme. To avoid such a situation, the NZ CRS bespoke legislative instrument will not stipulate any individual and/or organisation by name or any individual and/or organisation who will be a member of the scheme Managing Agency and/or Governance Board).

<sup>747</sup> A Deposit Return Scheme for Scotland: Full Business and Regulatory Impact Assessment, 2019

<sup>748</sup> A Deposit Refund System for the Czech Republic, Eunomia, 2019

Further, we acknowledge feedback received suggesting that the NZ CRS would benefit from closer alignment with the Australian schemes, particularly the Queensland container return scheme. However, it is important to reiterate here that the intent of the NZ CRS Design process was ‘to develop the best scheme based on best international practice and that is bespoke to Aotearoa New Zealand and developed in alignment with social, cultural, economic and environmental scheme outcomes.’ For the purpose of clarity and to distinguish the NZ CRS Design from the Queensland scheme, it is important to note here the following differences which will also be discussed in Section 14 and Section 15.

### Governance Board

The Governance Board make-up will be a diverse group of people based on the skills, experience and expertise they bring and will represent, as a minimum the following areas:

- 9-government appointed members (including an Independent Board Chair and representation from, but not limited to, Iwi, recyclers, financial, regulatory, customer, retail, community, waste sector, local government, beverage, experienced strategists and other stakeholders as well as the Managing Agency Chief Executive Officer) and be aligned to the representation of the Te Tai Ōhanga – The Treasury Living Standards Framework (i.e., Natural Capital, Social Capital, Human Capital and Financial/Physical Capital), including upholding Te Tiriti o Waitangi – The Treaty of Waitangi. Central government will appoint the scheme Governance Board with control applied through appropriate legislative frameworks.

The NZ CRS Governance Board make-up differs to the strong beverage producer representation as seen in the Queensland container return scheme to ensure the NZ CRS benefits from a diverse range of skills and experience. Further, under the Queensland container return scheme, Board members are approved by the Government.

Therefore, the government appointment of NZ CRS Governance Board members gives greater empowerment and responsibility to the government of the day to ensure the make-up of the Board reflects the current and future needs of Aotearoa New Zealand. It should be noted that the ‘appointment’ of directors to the NZ CRS Governance Board does not mean that the government has any greater or lesser control of the scheme Managing Agency than if it has ‘approved’ the Governance Board members. Any control by the government is via the bespoke scheme legislation and provisions within this to intervene with appropriate measures, should that be required. These measures could include, for example, replacing one (1) or more Governance Board members.

### Legislation

As has been discussed throughout previous sections, it is acknowledged that a bespoke NZ CRS legislative instrument is anticipated to support the establishment, operation and ultimate success of the scheme. Compared with the Queensland container return scheme, the NZ CRS legislative instrument will:

- Clearly define roles and responsibilities of the board and government.
- Require greater transparency of information than what has been required or reported in the Queensland scheme.
- Stipulate the consequences for the Board not delivering on targets including, for example, the appointment of independent commissioners and or replacing Board members. While the Queensland scheme enables the government to ‘dismiss’ the scheme operator for not achieving the minimum target of 85% in practice, it is acknowledged that this will not be applied given the difficulty to effectively appoint and establish an alternative scheme operator.
- Align and uphold the principles of Te Tiriti o Waitangi – The Treaty of Waitangi.

- The NZ CRS legislative instrument will not stipulate by name any individual and/or organisation who will be a member of the scheme Managing Agency and/or Governance Board.

### Transparency

Transparency of information is a critical component in a successful scheme and applies to all scheme participants, including the consumer. As such, and in comparison, to the Queensland container return scheme, the NZ CRS will provide greater transparency to the consumer purchasing scheme eligible beverage containers – in keeping with the findings of the ConsumerNZ survey (see Section 6). Additionally, the NZ CRS will also openly communicate scheme performance data such as monthly container sales and container return rates commencing from day one (1) of the scheme (i.e., scheme ‘go-live’ date).

### Scheme Performance

A critical element in the design of the NZ CRS is ensuring that the scheme Managing Agency and Governance Board maximise the scheme performance by consistently working to maximise container return rates in keeping with the key outcomes of the NZ CRS design and as stipulated in the bespoke NZ CRS legislative instrument. Therefore, there must not be a commercial incentive that restrains the scheme from doing better than it could be to drive or promote high container return rates (i.e., a scheme that has lower container return rates and is not overly successful). To emphasize this point and using the NZ CRS NZD10-cent and NZD20-cent deposit level and assuming a 1% scheme underperformance, the savings to the beverage producer are approximately:

- Under a NZD10-cent deposit, for every 1% of scheme underperformance the beverage producer saves approximately NZD\$4.7million.
- Under a NZD20-cent deposit, for every 1% of scheme underperformance the beverage producer saves approximately NZD\$7.0million.

For these reasons the NZ CRS Governance Board must be free of this conflict and focused on what is best for Aotearoa New Zealand. This requires wide representation of stakeholders as described above.

#### 11.14.1 New Zealand Container Return Scheme Financial Model Overview

To determine the financial aspects of the NZ CRS, PwC was commissioned in 2020 to develop a financial model to understand the cashflows (revenues and costs) of operating a NZ CRS. The financial model calculates the ‘cashflow’ (in NZD) impact of the scheme Managing Agency that will manage the scheme (see Section 14 for further discussion). Cashflows include the following:

- Deposit and scheme fee revenue;
- Deposit payments;
- Handling fee payments to container return facilities;
- Processing of materials at scheme Material Consolidation Facilities (see Section 7 for further discussion); and
- Fixed organisational costs.

Further, it is acknowledged that container return schemes can have a financial impact on consumers, and it is important that this is accounted for and assessed in the NZ CRS financial model. For the purpose of the NZ CRS financial model it is assumed that all scheme costs paid for by the producer will be passed through to consumers. It is though acknowledged that some producers and potentially retailers may choose not to pass these costs on to the consumer but that this will be a choice made by these organisations individually. To understand the financial impact on the consumer, the model calculates the additional costs that consumers are likely to pay and the deposit refund that a consumer will receive from returning the eligible scheme containers.

In addition to the consumer impact, the NZ CRS financial model also provides indicative estimates of other scheme impacts, including:

- Indicative net savings for kerbside recycling and refuse collection; and
- Indicative net savings of landfill disposal costs.

Further, following feedback received from the Scheme Design Working Group (SDWG), the NZ CRS financial model also includes five scenarios linked to key design choices, including but not limited to, the exclusion of glass from the NZ CRS.

It is also important to note here that the NZ CRS financial model is one (1) critical element in the design of the NZ CRS and that additional modelling will be required during the NZ CRS implementation stage to ensure a robust assessment has been completed. As such, the financial model outputs presented in this section exclude the following components which are expected to be undertaken during the NZ CRS implementation stage (see Section 17 for further discussion):

- Profit and loss, and balance sheet analysis;
- Tax implications;
- Cost Benefit Analysis (see Section 11.12)
- Detailed analysis of consumer behaviour (e.g., price elasticity of demand);
- Detailed analysis of wholesaler, distributor and retailer behaviour (e.g., extent to which costs will be passed on to consumers); and
- Analysis of impacts of the NZ CRS on wholesalers, distributors, retailers, domestic and global recycling and refuse markets, including employment, asset write-downs, commercial viability of council and MRF operations.

Lastly, a Cost Benefit Analysis has also been undertaken to support the NZ CRS design, the key results of which have been presented in Section 11.12.

In order to develop the NZ CRS financial model, several model considerations were made to provide the baseline, including:

- The model takes a whole of life view, covering a 30-year period;
- It includes both upfront and ongoing costs and revenues associated with the NZ CRS scheme fee and sale of recycled scheme material;
- The Managing Agency is a not-for-profit with the scheme fee per container set to meet the costs of the scheme operation;
- The model assumes establishment costs (e.g., upfront CAPEX [capital expenditure] and professional services fees) are incurred from 01 July 2021 with the NZ CRS 'go live' date from 01 July 2022;
- NZ CRS scheme fee payments are made by producers one (1) month in arrears;
- A loan will be required to finance the establishment costs and providing working capital due to NZ CRS payments being made in arrears;
- The NZ CRS scheme fee will be passed on, in full, to the consumer<sup>749</sup>, and that the increase in the cost of the beverage will result in additional GST;
- No impact on consumer purchasing behaviour as a result of the NZ CRS scheme fee has been factored into the model at this stage;

<sup>749</sup> Note: <https://gazette.govt.nz/notice/id/2020-go3342> - All governance activities will adhere to the Commerce Commission guidelines on collaborative activities between competitors, including but not limited to considering the option of applying for collaborative activity clearance from the Commission for the scheme.



- The model assumes that the NZ CRS will be required to refund deposits to councils and/or Material Recovery Facility (MRF) operators for kerbside collected eligible scheme containers; and
- The model does not factor in costs or revenues from processing eligible scheme containers collected via kerbside as these will continue to be processed through council MRFs.

The NZ CRS financial model has been designed by PwC to help understand the cashflow implications of several different scheme designs, including the following model variables:

- Volume;
- Refund model versus deposit model;
- Deposit fee (e.g., NZD10-cents, NZD20-cents, NZD30-cents);
- NZ CRS scheme fee;
- Advanced Material Recycling Fee (AMRF) (by plastic, liquid paperboard, metal, glass);
- Loan and financing terms;
- Return rate (starting, maximum, period between starting and maximum);
- Kerbside return rate;
- Materials in and out (by plastic, liquid paperboard, metal, glass);
- Number of people per container return facility;
- Proportion of eligible scheme containers returned by container return facility type (manual only, automated depot, Reverse Vending Machine [RVM]); and
- Whether or not deposit fee payments are made for eligible scheme containers collected through kerbside.

Underpinning the PwC NZ CRS financial model are the inputs and outputs as illustrated in Figure 35 below. Appendix F should also be referred to for a complete list of the assumptions and inputs used as well as a discussion of the financial model including additional graphical expressions of the model outputs.

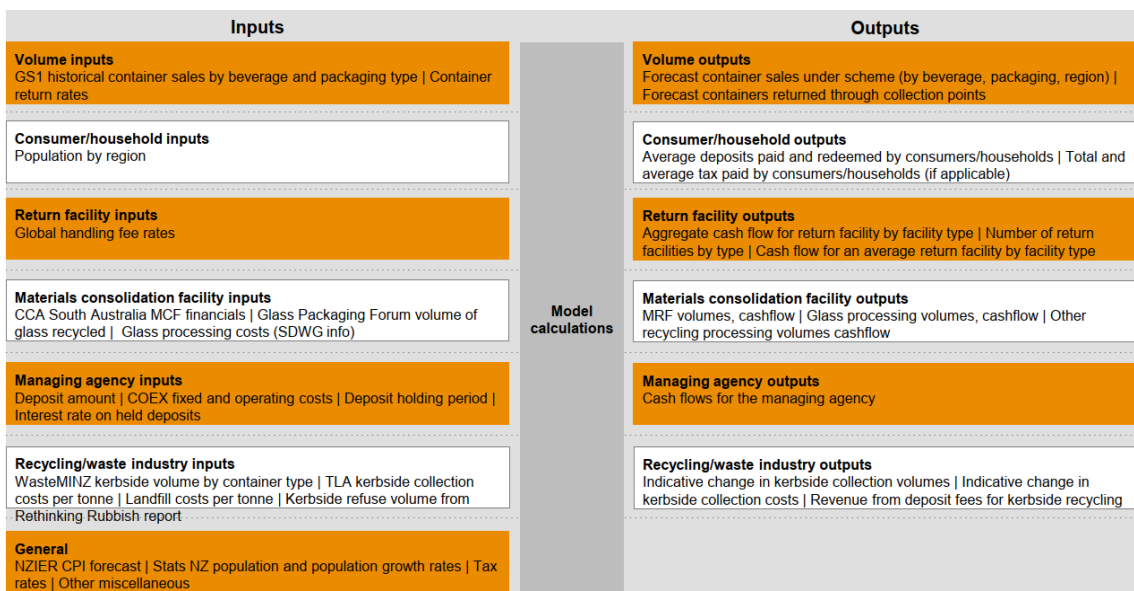


Figure 35: New Zealand Container Return Scheme summary model map

Additionally, PwC included sensitivity testing to understand the implications of key variables on the model, including:

- Container return rates – the impact of a  $\pm 5\%$  change in return rates;
- Container volume – the impact of  $\pm 5\%$  change in container volume sales; and
- Scheme costs – the impact of  $\pm 5\%$  change in scheme costs.

Due to the complexity of the model, many of the inputs and assumptions are interdependent and so does not seek to incorporate the interactions between inputs. The reason for this is because the inputs are complex and involve multiple inputs (e.g., return rates can be affected by scheme design choices, such as deposit levels and the number of container return facilities). As such, any change to the financial model inputs and assumptions will require a review of all other model inputs and assumptions to ensure their appropriateness.

Acknowledging the above, the NZ CRS financial model includes several important limitations which are included in Appendix F and are reproduced here for clarity and ease of reading:

- The model assumes deposit, scheme and Advanced Material Recycling Fees (if applicable) are passed through to the consumer – in practice some producers may choose to absorb these costs and consequently reduce their margins.
- Due to limited information the model does not factor in any additional compliance costs or increases to margin that producers and retailers may choose to pass on to the consumer.
- The model assumes a 6.5% decrease in the volume of containers consumed upon NZ CRS commencement (i.e., used for the purpose of acknowledging and modelling that there is a shift in volume of containers consumed), based on experience from Australian schemes and is not an absolute number as it is likely this will vary by beverage type – in practice consumers' consumption patterns may differ.
- The model assumes a handling fee which reflects costs and profit margins from container return facilities in Australian schemes. In Aotearoa New Zealand the actual costs may vary from what the model assumes.
- The model assumes scheme Material Consolidation Facilities<sup>750</sup> (MCFs) are built prior to scheme operation and allow for sufficient capacity for 30-years (the period of the model). In practice, the phasing for the construction of the MCFs may differ.
- Based on the information available, the model assumes the scheme Managing Agency controls and funds the MCFs, with resulting CAPEX and OPEX (operational expenditure) implications. The scheme Managing Agency may prefer to procure these services from third parties.
- The model does not assume scheme Managing Agency surpluses are reinvested into broader scheme outcomes (e.g., different processing capabilities). In practice the Managing Agency may seek approval to invest surpluses to improve social, environmental, cultural and economic outcomes.
- The model assumes the scheme Managing Agency will make deposit payments to councils and/or MRF operators for their kerbside containers. Other costs for kerbside containers (e.g., handling fee and materials consolidation costs) are not included.
- The model provides indicative kerbside cost savings based on limited information from councils regarding their kerbside refuse and recycling costs and costs of landfill. Actual costs, and therefore savings, may differ.

<sup>750</sup> The centralised dedicated scheme facility(ies) to receive, sort, verify, process and bulk eligible scheme containers.

### 11.14.2 Financial Model Comparison of the Deposit and Refund Models

Acknowledging the feedback received from the SDWG regarding the benefits and constraints of both the deposit and refund container return scheme models, the financial model sought to model both options, using the following definitions:

- A deposit model involves the beverage producer paying a deposit fee and scheme fee for all containers sold to the market, regardless of whether eligible containers are returned or not.
- A refund model involves the producer paying fees on all containers sold, but equal to the value which will cover the costs of containers returned through the scheme. This can mean that for schemes where return rates are low, the fees per container may be less than the value of the deposit.

Given the differences between the models, the NZ CRS financial model acknowledges this and as such also treats both models as follows:

- To set the CRS fee under the refund model, the financial model calculates the costs to run the scheme (less revenue from materials) for each year and then divides the value by the number of containers sold that are eligible for the scheme. The derived value is equal to the CRS fees per container.
- For the deposit model, the scheme fee is an ‘input’ where the user of the financial model sets the scheme fee in addition to the deposit fee. The scheme fee grows at a constant rate of 2.6% p.a. to adjust for increasing scheme costs. The implication of this is that a deposit model will generate cash surpluses when the return rate is low (Figure 36).

It is important to note here, that under the deposit model, the NZ CRS financial model has the functionality to reset the NZ CRS scheme fee every five (5) years, which allows for a lower scheme fee in the initial years of a CRS where the return rate is lower. Setting a reduced scheme fee within the first 5-year period reduces the surplus the scheme creates.

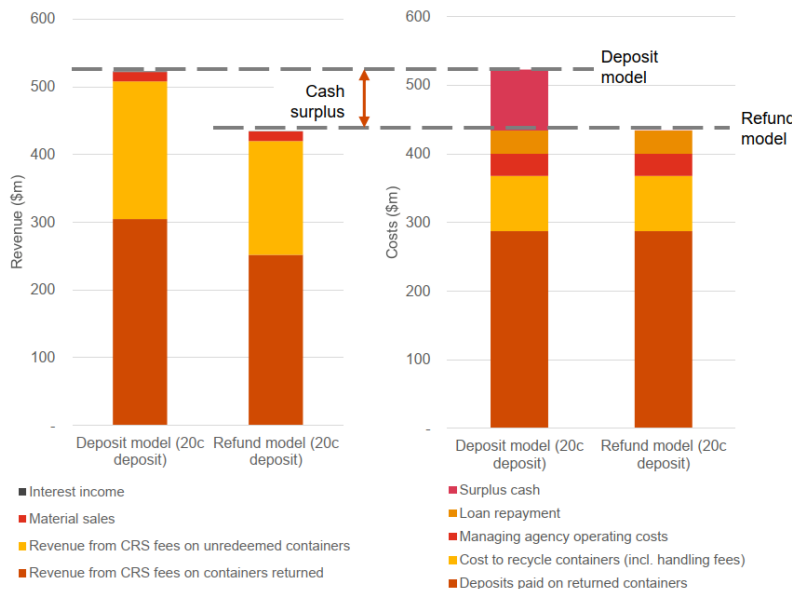


Figure 36: Scheme revenue and costs for year-1 under the deposit and refund models

As noted in Section 11.4.1, the PwC financial model includes five (5) NZ CRS design scenarios which were selected to illustrate the effects of scheme design choices:

1. 20-cent refund model;
2. 10-cent refund model;
3. 20-cent glass out refund model;
4. 30-cent refund model; and
5. 20-cent deposit model.

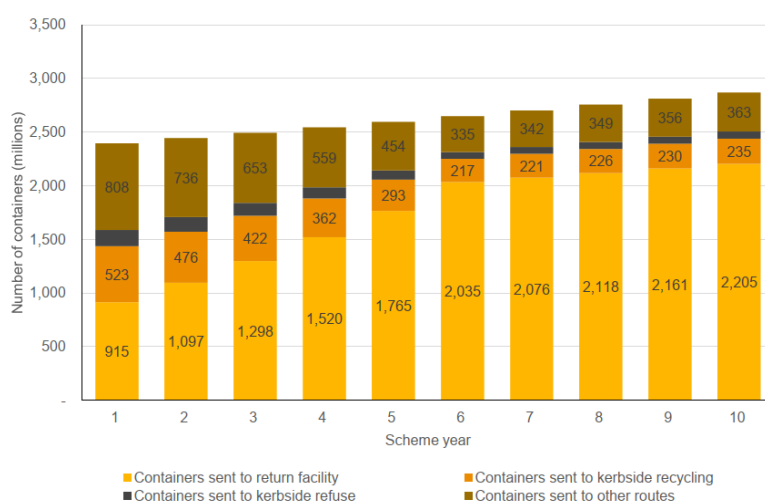
Appendix F for further detail regarding the design choices for each of the above listed five (5) scenarios.

### 11.14.3 Summary of Key Financial Model Outputs

Based on GS1 data, local council provided data and feedback received from the SDWG, the total number of eligible scheme containers in Aotearoa New Zealand at the NZ CRS 'go live' date of 01 July 2022 is expected to be approximately 2.3billion containers (comprising approximately 790million plastic, 125million liquid paperboard, 510million metal and 925million glass containers).

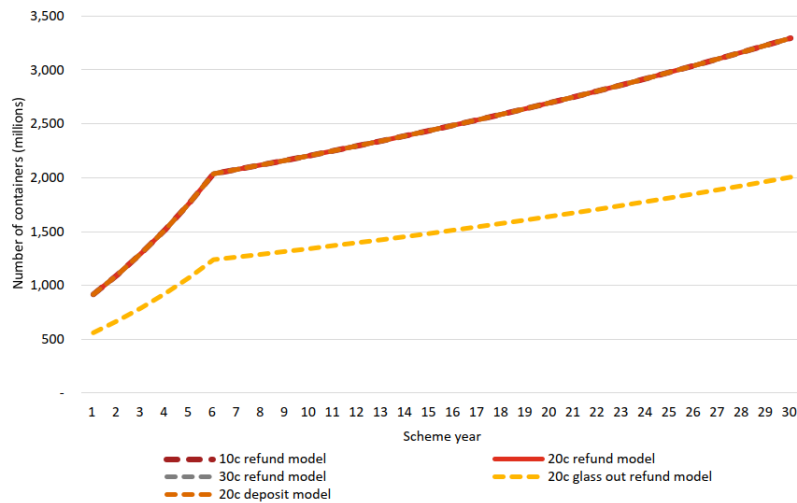
Noting that a 'ramp up' period is expected to occur over an approximate 5-year period (as has been noted across several Australian container return schemes) during which time consumers, for example, adapt to the scheme and familiarise themselves with collecting and returning eligible scheme containers, the financial model suggests that in year-1 of the operational NZ CRS approximately 60% (approximately 1.4billion eligible scheme containers) (assuming a 20-cent refund model) will be processed through the NZ CRS with approximately 38% (900million eligible scheme containers) processed through container return facilities. The remainder of the year-1 2.3billion eligible scheme containers are modelled as either being collected via kerbside recycling (approximately 520million eligible scheme containers) and collected via other routes such as disposal to the environment and disposal to city bins (approximately 800million eligible scheme containers). Further analysis will be required during the NZ CRS implementation stage to better ascertain the other routes for container disposal in order to more definitively model this data (Figure 37) (refer Appendix F for further detail).

As the NZ CRS progresses through the first 5-years of operation (i.e., service becoming normalised to consumers), the proportion of eligible scheme containers collected via container return facilities continues to increase, with at year-6 approximately 2billion eligible scheme containers collected via this pathway. Similarly, at year-6 the proportion of eligible scheme containers collected via kerbside recycling collections decreases to approximately 217million containers (Figure 37).



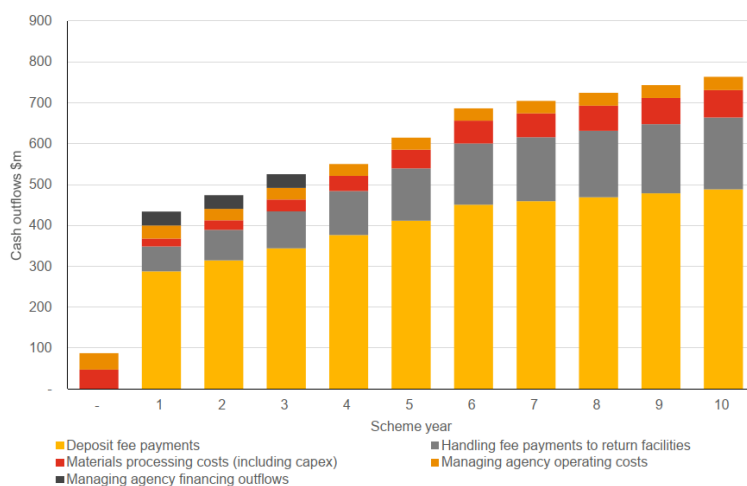
**Figure 37: Eligible scheme container volumes under a NZD20-cent refund model**

When the model is used to investigate the number of eligible scheme containers sent to container return facilities across the 30-year scheme period and assuming a return rate of 60% in year-1 rising to 85% over a 5-year period, it is clear that the volume of containers is the same for all scenarios except where glass is excluded (Figure 38) (refer New Zealand Container Return Scheme financial model Appendix F for further detail).

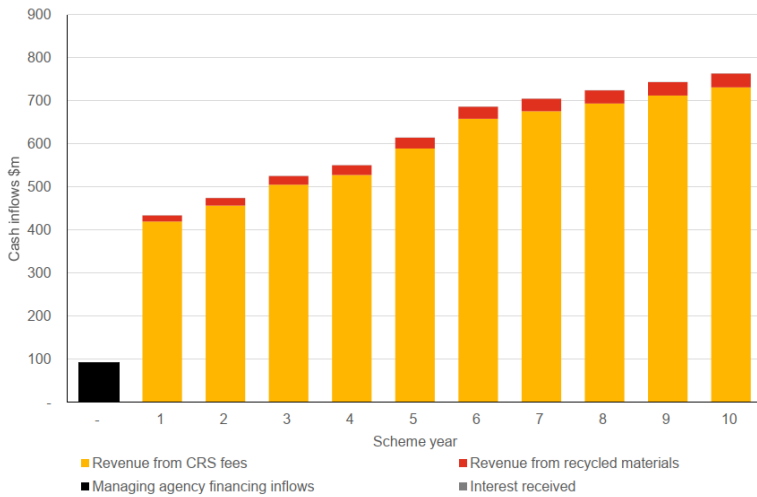


**Figure 38: Number of eligible scheme containers sent to container return facilities – all scenarios**

When looking at the scheme Managing Agency cash outflows under a 20-cent refund model, the financial model clearly shows that deposit fee payments comprise the highest cost at approximately \$290million in year-1 of the operational NZ CRS. The remainder of the costs incurred by the scheme Managing Agency comprise handling fee payments to container return facilities, operating costs and financing outflows of the Managing Agency and materials processing costs (including CAPEX) (Figure 39). Further, the scheme Managing Agency cash inflows under a 20-cent refund model clearly shows that revenue from scheme fees comprise the greatest source of revenue with revenue from the recycled scheme materials also seen as a cash inflow (Figure 40) (refer Appendix F for further detail).

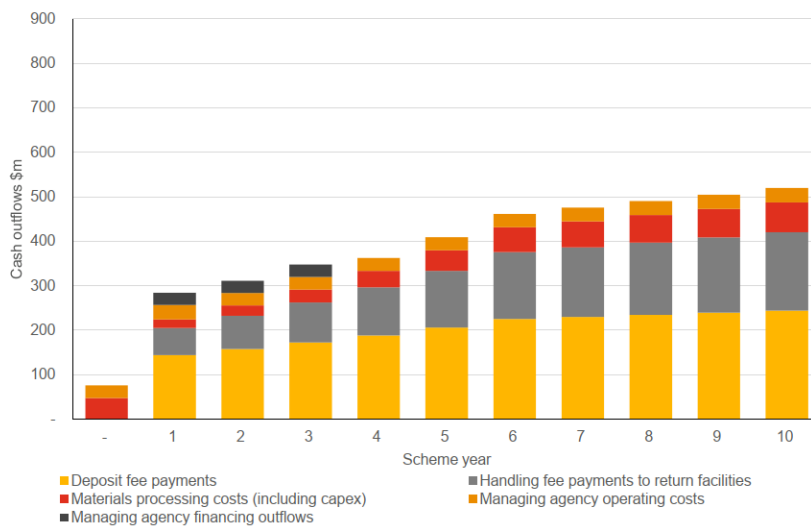


**Figure 39: New Zealand Container Return Scheme Managing Agency cash outflows – 20-cent refund model**

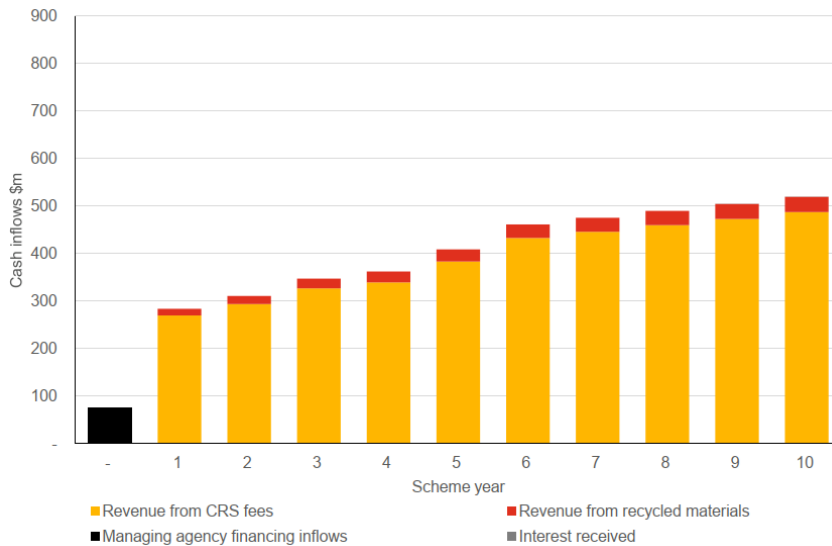


**Figure 40: New Zealand Container Return Scheme Managing Agency cash inflows – 20-cent refund model**

In comparison, under a 10-cent refund model, the Managing Agency costs are approximately 33% lower than compared to the 20-cent refund model over a 10-year period (Figure 43 and Figure 42) (refer Appendix F for further detail).

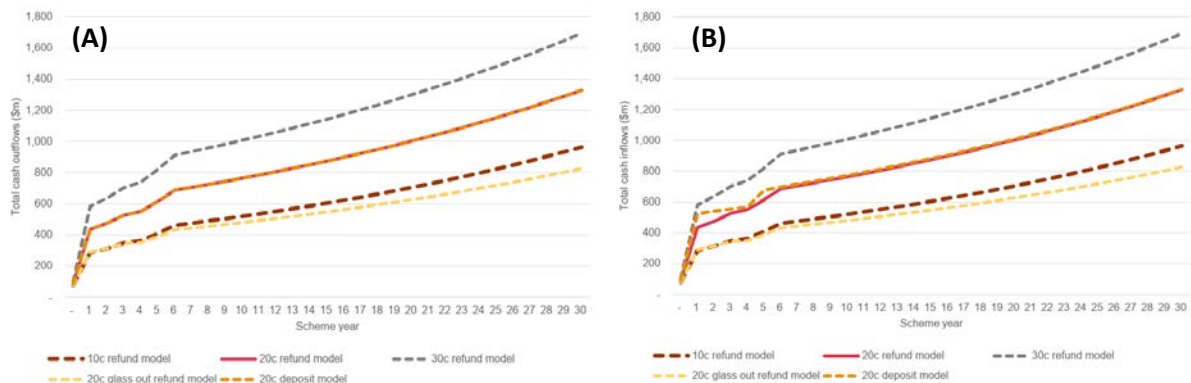


**Figure 41: New Zealand Container Return Scheme Managing Agency cash outflows – 10-cent refund model**



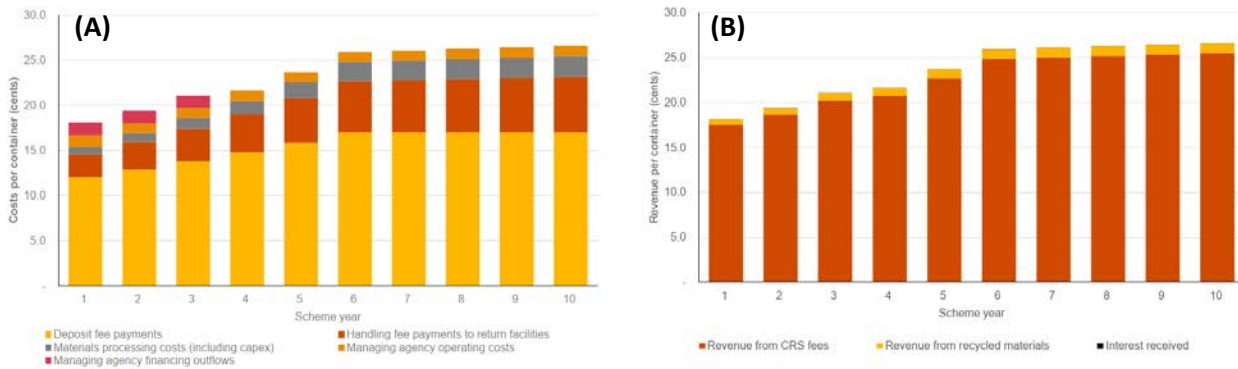
**Figure 42: New Zealand Container Return Scheme Managing Agency cash inflows – 10-cent refund model**

As illustrated in Figure 43A and B below, it is clear that the selected deposit fee level (e.g., 30-cent, 10-cent) influences the cash inflow and outflow of the Managing Agency with glass out scenario showing the lowest cash inflow and outflow compared to all other modelled scenarios. However, while glass out and the 10-cent deposit level indicates a ‘cheaper’ cash inflow and outflow scenario for the Managing Agency, this needs to be balanced with consideration given to a wider range of factors, including but not limited to, the expected container return rate and consumer incentivisation to actively participate in the NZ CRS (refer Appendix F for further detail).



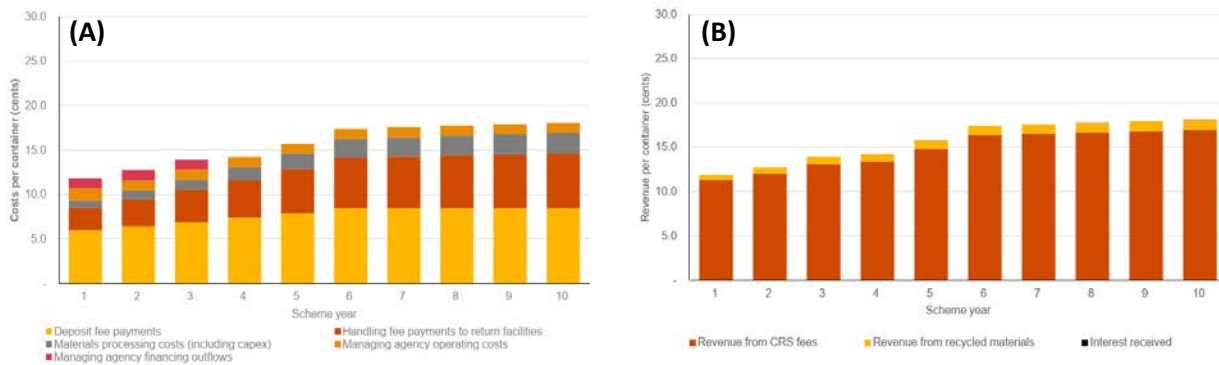
**Figure 43: New Zealand Container Return Scheme (A) Managing Agency cash outflows, and (B) inflows – all scenarios**

Looking further at the scheme financials associated with a 20-cent refund model, once the NZ CRS has progressed through the 5-year ‘ramp up’ period the costs on a per container basis are on average 26-cents comprising deposit fee payments, material processing costs (including CAPEX), Managing Agency financial outflows and operating costs and handling fee payments to container return facilities (Figure 44A). Similarly, the revenue per container under a 20-cent refund model is also approximately 26-cents comprising revenue from NZ CRS scheme fees, sale of recycled scheme material and interest received (Figure 44B) (refer Appendix F for further detail).



**Figure 44: New Zealand Container Return Scheme (A) Managing Agency costs per container – 20-cent refund model, and (B) Managing Agency revenue per container – 20-cent refund model**

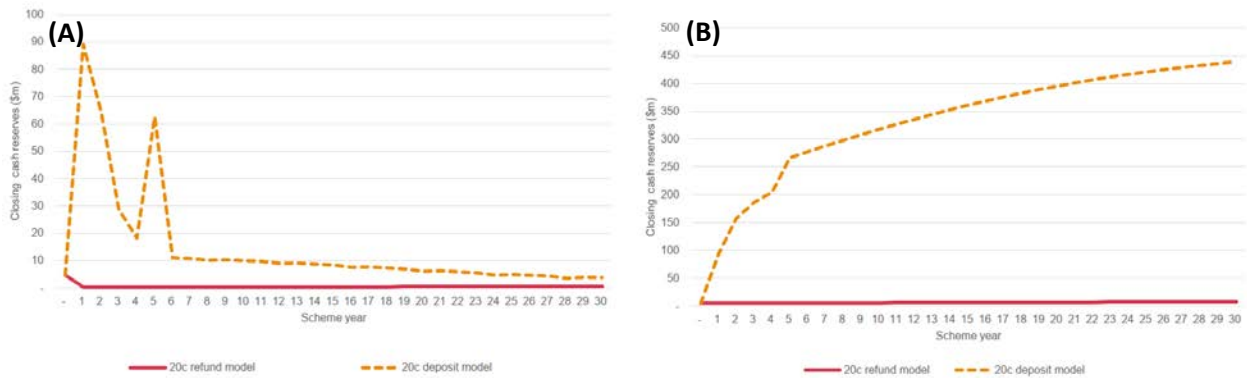
Further, when comparing the Managing Agency cost per container on a 10-cent refund model to a 20-cent refund model, it is clear that from year-6 the cost per container is between a 6.2-cent to 8.5-cent lower under the 10-cent refund model (Figure 45A). Similarly, the revenue per container is also comparatively lower than compared to the 20-cent refund model (Figure 45B) (refer Appendix F for further detail).



**Figure 45: New Zealand Container Return Scheme (A) Managing Agency costs per container – 10-cent refund model, and (B) Managing Agency revenue per container – 10-cent refund model**

As discussed earlier in Section 11, a key difference between the deposit and refund container return scheme financial models is that refund models do not generate financial surpluses whereas the deposit model generates cash reserves which can be used for other purposes (e.g., reinvested back into the NZ CRS) (Figure 46A and B). However, as has been discussed throughout Section 11, where cash reserves are built up by a container return scheme, these need to be supported by, for example, bespoke container return scheme legislative instruments which establish clear boundaries of use (e.g., for scheme purposes only including the reduction of scheme fees, investment into new technologies or supporting initiatives such as the establishment of refillable infrastructure [e.g., bottle washing lines]) (refer Appendix F for further detail). It is important to note here that the scheme Managing Agency budget will not be constrained or impacted because of the lower scheme funds available under a refund model versus a deposit model as this will be managed by the establishment of scheme strategic and business plans identifying budget requirements that will in turn be funded from the scheme.





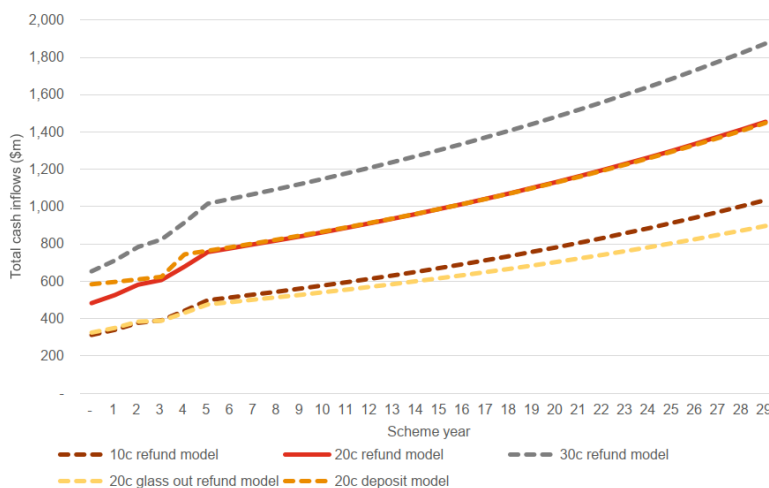
**Figure 46: New Zealand Container Return Scheme (A) Managing Agency surplus/deficit, and (B) Managing Agency cash reserves – 20-cent refund/deposit model**

Of key importance to the NZ CRS is the cost of the scheme to the consumer. While it is acknowledged that the cheapest scheme may not provide consumers with the most convenient service, the converse is also true and so ultimately the objectives of the container return scheme as well as central government objectives must be taken into consideration when determining the specific financial design arrangements (including the deposit level).

Further, the cost impact on the consumer is dependent on the deposit fee, the scheme fee and GST, and the extent to which these costs are passed through to the consumer by the retailer (Figure 47). The following list provides a high-level example (in the interest of keeping this simplistic) of the potential cost impact of the NZ CRS on the consumer (refer Appendix F for further detail):

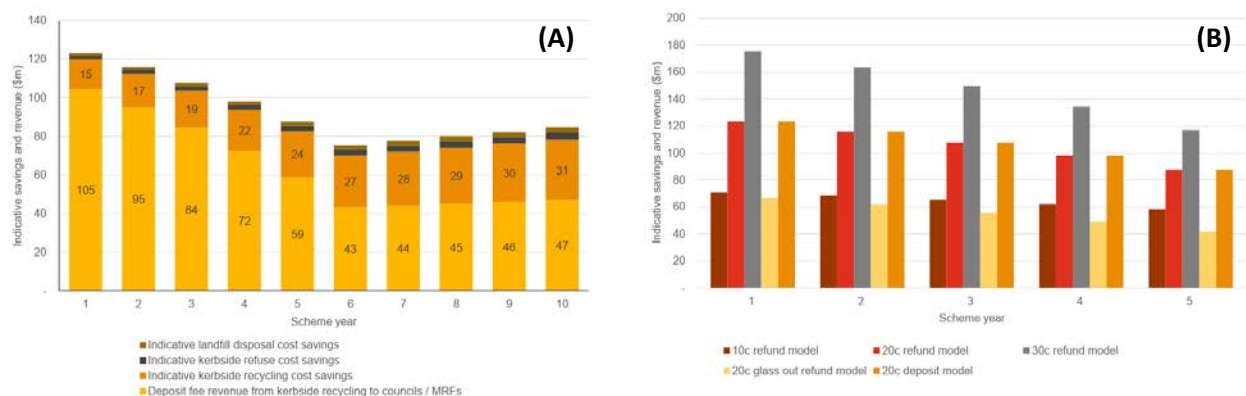
- If the deposit is 10-cents and the scheme fee is also 10-cents and the container return rate was 50% then the approximate cost per consumer would be approximately 10-cents plus GST per container.
- If the deposit was 10-cents and the scheme fee is also 10-cents and the container return rate was 75% then the cost per consumer would be approximately 15-cents plus GST per container.
- If the deposit was 20-cents and the scheme fee was 10-cents and the container return rate was 75% the cost to the consumer would be approximately 22.5-cents plus GST per container.

The PwC financial model provides a means for the actual numbers (e.g., deposit, scheme fee) to be inputted with the model calculating the outputs and results from that. There are also other implications which influence the cost to the consumer such as the cost to establish the scheme as referred to in Appendix F.



**Figure 47: Increased cost to the consumer – all scenarios**

As has been reported from across several global container return schemes (e.g., New South Wales), Material Recovery Facilities (MRFs) and local councils commonly enter into revenue sharing arrangements where the deposit associated with eligible scheme containers collected via kerbside recycling collections are shared amongst the parties such as a 50/50 revenue sharing arrangement (see Section 7 for further discussion). With regards to the NZ CRS, and to minimise unintended perverse outcomes such as driving higher eligible container return rates via kerbside recycling to support higher revenues for both MRFs and local authorities, one option to consider is that any revenue sharing between MRF operators and local authorities is limited to the handling fee amount only, not the deposit. This would reflect the same payment made to a collection point. The unredeemed container deposits given up by consumers choosing to place eligible scheme containers in kerbside recycling would then be used to reduce overall scheme costs. Figure 48 below illustrates the indicative benefits under a deposit revenue sharing arrangement between local councils and MRFs (refer Appendix F for further detail).



**Figure 48: Indicative benefits to local government and Material Recovery Facility operators (A) under a 20-cent refund model and (B) under all scenarios**

Notwithstanding the outcomes of the research and feedback received from the SDWG, the NZ CRS Project Team on balance consider the refund model to provide the consumer with a scheme that is more cost effective and efficient but that a refund model must be linked to strong scheme Governance and central government oversight (see Section 14 and Section 15 for further discussion on this matter). The reasons for the refund model include, but are not limited to, providing a smoother transition of price at the consumer level as the scheme establishes. Further, if however, it was decided by the Government of the day that the NZ CRS be controlled and managed by the beverage industry, it is then recommended that a deposit model is adopted. This is to ensure that the beverage industry is held accountable to ensuring container return rates meet and where possible exceed scheme targets as set in the bespoke NZ CRS legislative instrument.

Further, notwithstanding the original recommendation of a 20-cent deposit to be applied to the NZ CRS, on balance and taking into consideration feedback from stakeholders, the Project Team are of the view that the NZ CRS commence with a 10-cent deposit noting the following:

- A 10-cent deposit will be put in place for a period of no more than:
  - 3-years (36-months) to align with the first scheme review period (see Section 13 and Section 14 for further discussion) with the deposit automatically increasing to 20-cents at year-5 (60-months) allowing for a 2-year (24-month) transition period if the 70%-year-3 (36-month) container return target is not met.
  - If the return rate does not reach 80% within 4-years (48-months) the deposit level will automatically increase to 20-cents at year-6 (72-months) allowing for a 2-year (24-month) transition period if the 80%-year-4 (48-month) container return target is not met.
  - The next deposit review will align with the 5-year (60-month) scheme review period with the deposit increasing to 20-cents if the 85%-year-5 (60-months) container return rate

target is not met. Again, a 2-year (24-month) transition period will be provided for should this situation occur.

- Thereafter, the deposit level will be reviewed every 5-years (60-months) to align with the regulated scheme review periods. The scheme review periods and the requirements for deposit level increases will be included in the bespoke NZ CRS legislative instrument.
- It is further recommended that no later than 9-months before the scheme commences a final review is undertaken by the government regulatory authority overseeing the NZ CRS to confirm the starting deposit rate of 10-cents per container is still appropriate.

## 11.15 Summary of Key Findings

The outcomes of the above research show that the financial arrangement of a scheme is dependent on the design and application of the deposit on the beverage producers; specifically whether the beverage producer pays a deposit on all eligible containers sold to the market regardless of whether these containers are returned or not (i.e., deposit model), or required to only pay a deposit at an amount determined by the proportion of eligible containers that are returned (i.e., refund model). Similarly, the research indicates that the financial design of a scheme also influences the operation of a scheme including return rates, the ability for the scheme to have sufficient funds to invest into community and/or environmental initiatives and consumer engagement, depending on the objectives and success measures of the scheme.

Looking at the scheme model design in more detail, a deposit model is based on the beverage producer paying the relevant deposit to the agency responsible for the scheme operation (e.g., Managing Agency) on each container sold to market, regardless of whether the consumer returns the container or not for a refund. Under a deposit model, the Managing Agency retains any unredeemed/unclaimed deposits, interest accrued on deposit funds and revenue from the sale of scheme material to help fund the scheme which helps to reduce any final administrative costs charged to the beverage producer.

In comparison, a refund model is based on the beverage producer paying the relevant deposit to the agency responsible for the scheme operation (e.g., Managing Agency) on each container sold to market. However, under a refund model the beverage producer only pays in proportion to the actual number of containers returned, with no unredeemed/unclaimed deposits available to reduce scheme costs. This means if only 50% of the containers are returned the beverage producer will only need to pay 50% of the deposit amount and associated scheme fees for each container placed into the market. Consequently, the scheme cost to beverage producers is lower if the return rate for eligible containers is also low. However, it is also acknowledged that while a refund model provides the consumer with a scheme that is more cost effective and efficient than the deposit model, this type of model must be linked to strong scheme Governance and central government oversight vs a beverage producer controlled or dominated Managing Agency. This is to address the concerns associated with the beverage producer not being put in a position where it could limit the full potential of the scheme performance (such as an aspirational target of 95%) owing to commercial conflict where the more successful the scheme is the greater the cost it will be to the beverage sector and their customers. Further, if however, it was decided by the Government of the day that the NZ CRS be controlled and managed by the beverage industry, it is then recommended that a deposit model is adopted. This is to ensure that the beverage industry is held accountable to ensuring container return rates meet and where possible exceed scheme targets as set in the bespoke NZ CRS legislative instrument.

The following conclusions are also drawn from the research:

- The role of Government in the design and implementation of container return schemes is determined by country specific legislation and drivers to maximise performance (Section 11.1);
- There is growing awareness and recognition in Aotearoa New Zealand that the economy must transition from a linear to a circular (make-use-return) economy - *ōhanga āmiomio* with the

New Zealand Government having established and enacted several key legislative documents that set the requirements for waste minimisation and management in addition to ratified several international agreements to manage Aotearoa New Zealand's impact on the global waste sector. This is reinforced by Te Ao Māori, reflected in Tiriti o Waitangi principles, which similarly promotes responsible stewardship of the whenua, including valuing resources, and thereby respecting the mauri of Papatūānuku (Section 11.1);

- Under a mandatory NZ CRS, the New Zealand Government would require oversight of the development of the system, as well as the means to monitor and enforce compliance. This degree of government oversight has been seen in well performing global container schemes;
- In most global countries with a container return scheme in place, the value of the deposit varies depending on the type and/or size of the container and consumer engagement (Section 11.1);
- Broadly, the majority of well performing European countries employing a container return scheme (i.e., return rates of >85%), have set a deposit value of the equivalent NZD of approximately 30-cents per eligible container with the recently commissioned Scottish scheme setting a deposit value of approximately NZD40-cents per eligible container (Section 11.2);
- The Australian State/Territory schemes have a consistent deposit level of AUD10-cents per eligible container which is lower than several global container return schemes. It is also worth noting here that the South Australian scheme when originally implemented in 1977 had a deposit level of AUD5-cents but increased this to AUD10-cents several years ago and has been used by all Australian schemes as the base deposit level (Section 11.2);
- A flat rate deposit such as seen in Australian schemes and other global schemes provides equal incentive to return all containers, ensures that the system is fair to all producers, and is simpler to administer (Section 11.2);
- In addition to the type and size of a container and consumer engagement, many other inter-related factors (e.g., consumer behaviour, access to collection facilities, scheme education and engagement including awareness of the scheme kaupapa - purpose) exert their own influence on how effective (i.e., return rate) the scheme is (Section 11.2);
- The value of the deposit and any associated scheme related fees is also influenced by the design of the scheme, including whether the responsibility of paying for the scheme sits with the beverage producer or with the consumer;
- The selection and implementation of scheme container return facilities will influence the type and number of options available to a consumer in order to receive the appropriate eligible container refund. Schemes that employ manual collection facilities (e.g. depots, over-the-counter, container bag-drop or mobile/pop-up facilities) will typically provide refunds in cash or via an electronic funds transfer. Where automated collection facilities are used within a scheme (e.g., Reverse Vending Machine as a stand along unit or integrated within a return-to-retail model) customers are commonly provided with a range of options to receive the container refund, including vouchers which can be redeemed at supermarkets for cash or a discount on their shopping bill, direct funds credit (e.g., PayPal) to a nominated bank account, or donation to a charity (Section 11.2);
- Where a consumer elects not to receive a refund on their eligible scheme containers, they may wish to donate their containers to a charity, school or local community group after which the receiver takes ownership of the refund and the original consumer forgoes the refund. In this case, the community group, school or charity can then elect to receive the eligible refund through the available scheme options (Section 11.2);
- A consumer may not wish to return the eligible containers via the scheme collection facilities and may instead elect to place the eligible material in the kerbside recycling bin. In this case, the consumer does not receive the refund, instead the businesses the process the collected kerbside materials (i.e., Material Consolidation Facility or Material Recovery Facility) can claim

- this amount or may have a refund sharing agreement in place with the local council (Section 11.2);
- The deposit value should be high enough to incentivise consumers to put in the additional effort to return their bottles and encourage people to collect litter and return containers (Section 11.3);
  - The deposit value can impact initial purchasing behaviour (Section 11.3):
    - For those who do not intend to return the containers, the deposit will act as a product tax.
    - If the operational costs of the scheme are too high this may discourage customers purchasing beverage container products.
  - In relation to the monetary value acting as the incentive, the act of storing a new separate stream of recyclables rather than disposing it in the existing bins at home, as most are used to, will require additional time, space and transport requirements. A deposit value that is considered to be too low may not incentivise consumers to put in the additional efforts (Section 11.3);
  - If beverages are clearly labelled to inform consumers that they are paying a refundable deposit and if the system for returning the beverages is convenient, then the impact of the deposit on the consumption behaviour of consumers should be limited (Section 11.3);
  - According to the New South Wales Environment Protection Authority, incentives in container return schemes are particularly effective in making positive long-term behaviour changes for people who don't already recycle, people who describe themselves as 'non-environmentalists', and lower income householders (Section 11.3);
  - The incentives provided by the deposit value could be dependent on the type and cost of the beverage itself, and that this could have unexpected consequences on consumer behaviours (Section 11.3);
  - The OECD policy manual document note that the refund amount is the key element in the system that governs consumer behaviours and is consequently likely to impact the performance of the system and success in achieving a high return rate (Section 11.4);
  - To justify the high costs that may be associated with a separate collection system, the system should incentivise a high return rate. If the deposit value is too low for consumers to be incentivised to return containers, costs may be incurred that are associated with the disposal of the container in kerbside (Section 11.4);
  - The refund amount is the key element in the system that governs consumer behaviours and is consequently likely to impact the performance of the system and success in achieving a high return rate (Section 11.4);
  - The New South Wales Environment Protection Authority stated that evidence has shown that container return rates vary depending on the value of the financial incentive, and that legislated container return schemes that offer a financial incentive demonstrate high rates of container recovery (Section 11.4);
  - According to the New South Wales Environment Protection Authority, incentives with a higher financial value generated higher return rates (Section 11.4);
  - The relationship between the deposit value and return rates is not linear. After a certain point, high value incentives can generate smaller increases in return rates. Other variables can also contribute to this such as the location of collection return facilities (Section 11.4);
  - A feasibility study<sup>751</sup> undertaken in 2009 for a container deposit scheme in Tasmania suggested that a deposit value of AUD20-cents is adopted rather than AUD10-cents. The study stated that

<sup>751</sup> Hyder Consulting 2009, Feasibility Study of a Container Deposit System for Tasmania, available from: [https://www.europarl.europa.eu/RegData/etudes/note/join/2011/457065/IPOL-AFET\\_NT\(2011\)457065\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/note/join/2011/457065/IPOL-AFET_NT(2011)457065_EN.pdf)

the value is expected to help address the diminished deposit value over time which eventually results in decreased recycling rates (Section 11.4);

- To keep up with inflation, preliminary analysis suggests that an AUD5-cent deposit increase is recommended for approximately every 10-years (Section 11.4);
- The New South Wales Environment Protection Authority stated that evidence has shown that container return rates vary depending on the value of the financial incentive, and that legislated container return schemes that offer a financial incentive demonstrate high rates of container recovery (Section 11.4);
- Of New Zealand consumers surveyed between February and March 2020 (Section 11.5):
  - 78% were in favour of a NZ CRS with 72% reporting that they were very likely to use the NZ CRS.
  - 79% reported convenient drop-off points (i.e., container return facilities) and 67% reporting the need for easy to understand information regarding what containers the NZ CRS covers;
  - 64% noted that all containers made of plastic, glass and metal should be included in the NZ CRS;
  - 70% noted that supermarkets would provide the most convenient place to return scheme eligible containers followed by 63% at collection depots (e.g., community recycling centres and recycling facilities), 40% to other retail outlets (e.g., bottles stores and dairies);
  - 58% (more than half of respondents) considered a deposit amount up to NZD20-cents would be sufficient;
  - 31% were supportive of a deposit amount of NZD5-cents to NZD10-cents;
  - 40% of respondents supporting cash, 21% direct payment to a bank account, 16% voucher, 6% charity and the remaining 17% reporting other methods; and
  - 69% believed it was somewhat important or very important for the refundable deposit fee to be shown on shopping receipts and 62% believed it was somewhat important or very important for the non-refundable scheme administration fee to also be shown on shopping receipts.
- A commonality between all global container return schemes is the need for collection and sorting of scheme eligible containers whereby retailers and/or collection depots are responsible for handling (collecting, sorting and packaging) empty containers which are then transported to the materials processor or direct to the container manufacturer. A handling fee is used to compensate these collection facilities and is generally paid by the agency tasked with managing the scheme (Section 11.6);
- Across the global container return schemes, it is the beverage producer that pays both the deposit and the handling fee per container to the agency responsible for managing the scheme. Some global schemes apply a differential handling fee depending on whether beverage containers are compacted or sorted, with compaction receiving a higher handling fee reflecting the transport efficiencies generated by compacting the containers and that compaction at the RVM is reported to reduce the opportunity for fraudulent claims (e.g., collector or sorted passing already redeemed containers back through the RVM) ((Section 11.6);
- The transport of materials can vary depending on the scheme design but may include management by the scheme Managing Agency whereby contracts with logistics providers are entered into, the Managing Agency utilises their own transportation fleet, or third-party logistics providers service collection depots or processors. While each arrangement has their own unique attributes, generally, the cost of logistics in a container return scheme can represent a large cost of the scheme operational finances (Section 11.7);
- An important consideration when determining scheme logistic arrangements and associated costs is the price impact variation depending on metropolitan versus regional/remote areas and

transport preferences depending on container type and volume (e.g., higher proportion of glass versus compressed plastic bottles) (Section 11.7);

- In addition to maximising transport efficiencies by methods such as contracting third parties and utilising back-haul arrangements, the Managing Agency must ensure strict anti-fraud measures are put in place (e.g., contractual obligations, auditing and verification, reporting) to closely monitor and assess the performance of the logistics companies involved in the scheme. Where the Managing Agency does not retain oversight and/or control of the logistics companies (e.g., collection depots/processors arrange individual logistics contracts), the Managing Agency risks increased fraudulent activities due to lack of data transparency (Section 11.7);
- The total value of unredeemed deposits is linked to the deposit value and container return rates particularly in the early stages of a deposit scheme. Unredeemed deposits (or unclaimed deposits) are deposits that were paid on the container, but the containers were not redeemed through the scheme (e.g., kerbside refuse collections, disposal to landfill, litter stream) (Section 11.8);
- Across the global container return schemes, the revenue generated from unredeemed/unclaimed container refunds is reported to directly or indirectly support funding of the respective scheme, while acknowledging that in some schemes the unredeemed deposits may be absorbed by, or kept by, the beverage industry or by the respective scheme government authorities. This is achieved through the beverage industry (where the beverage industry manages the scheme) retaining and using unredeemed/unclaimed container refunds to cover their costs, or the government may take ownership of these funds. In some cases, the value of material recyclate has been reported to also fund the operation of the scheme. However, most container return schemes also have additional fees to assist with funding the scheme (including handling expenses associated with the recovery of materials) such as Container Recycling Fees (Section 11.8);
- Recognition that not all container packaging materials are equal with some more recyclable and valuable than others. In practice this means that materials that are difficult to recycle or problematic such as liquid paperboard may need to incur additional cost to see them successfully recycled in keeping with the outcomes of the NZ CRS design while other materials may receive a net income such as aluminium. Approaching this in an open and transparent way will ensure container material choices by beverage producers are recognised and reflects any net cost or revenue that is expected to ultimately be passed on to the customer. Also, in keeping with the outcomes of the NZ CRS design, the non-financial impacts associated with container material choice must be factored in or at the very least provided for to help shape the direction and choice of container material in the future (Section 11.9);
- In the establishment of container return schemes, the eligible scheme material is effectively allocated a financial value that in most cases is more than its material value (e.g., scrap aluminium). Therefore, the entity responsible for operation and management of the scheme needs to have in place monitoring and enforcement procedures to prevent fraudulent activity and claims. Fraud is a tangible risk for any container return scheme and may include situations whereby a collection contractor might collect uncompacted containers from an RVM and pass these back through the machine to redeem the refund. Where RVMs are used that compact and/or crush the containers (e.g., aluminium cans, plastic bottles), the container 'destroyed' so that the container nor unique identification scheme logo cannot be re-read by the RVM (Section 11.10);
- Where schemes utilise manual collection facilities, including collection depots, automated container counting and verification helps to identify fraudulent activity and ensure that payment is only provided on eligible scheme material. To help achieve this, scheme eligible containers need to include a specific scheme logo (e.g., unique scheme identifier) which is applied in a way

so as to minimise fraud (e.g., labels printed directly on to the container or a self-adhesive label applied by the beverage producer (Section 11.10);

- Reporting of clear and transparent scheme related information is important to ensure financial transparency (where appropriate) is provided to relevant scheme participants. Many of the global container return schemes employ an integrated but separate financial accounting system to manage scheme costs including deposit refunds, handling fee payments and management of unredeemed/unclaimed deposits to ensure transparency and auditable records to be maintained and assessed. Additionally, reporting of key performance data by the agency responsible for scheme operations and performance provides greater clarity and transparency on the efficiency of the scheme whilst highlighting areas of improvement (Section 11.11);
- While implementation of a container return scheme is likely to provide MRFs and councils with revenue from unredeemed/unclaimed deposits, this must be considered in the overall context where the amount of recyclable material entering a MRF from kerbside collections is likely to decrease as consumers seek to redeem the deposit value. However, the impact of any changes in recyclable material entering a MRF is also dependent on the MRFs broader commercial arrangements and their ability to offset the loss of kerbside material with other sources of recyclable material (Section 11.13);
- Where information was available, container return schemes are likely to result in a change in the amount of materials (including those valuable materials such as PET) processed by a MRF as these materials are redeemed at collection points. Alongside a change in material quantities entering the MRF, the MRF may also consequently see a change in financial revenues including a reduced amount of gate fees collected and may reduce the amount of material a MRF can sell to commodity markets. However, as already noted, MRFs may also see an increase in revenues associated with eligible scheme material deposits (Section 11.13); and
- Alongside the potential reduction in material volumes entering a MRF, savings may also be realised by councils through reduced kerbside collection costs and extended landfill life (Section 11.13).

## 11.16 Summary of Design Feedback Received

The following table provides a high-level summary of the feedback received from the Scheme Design Working Group (SDWG) members after reviewing the section information. As many suggestions as possible have been incorporated but the NZ CRS Project Team acknowledge that the wide range of views expressed meant not every edit could be accepted. The NZ CRS Project Team is grateful for those who have provided feedback and where possible these have been used to provide further clarity and context throughout this section and to identify areas requiring further assessment during the NZ CRS implementation stage (Section 17).

Scheme Financials Feedback – High-Level Summary	
Areas for further Investigation	
The financial drivers for the Managing Agency to reach targets with associated timeframes (see Section 14 and Section 17 for further discussion).	Greater level of evidence showing how barcodes, logos and RVMs help minimise fraud and their ability to count individual containers (see Section 17 for further discussion).
The impact of the GST system (see Section 17 for further discussion).	The processes for the Managing Agency to set fees and procuring services, and the transparency requirements for the Managing Agency (see Section 14 and Section 17 for further discussion).



<b>Scheme Financials Feedback – High-Level Summary</b>	
Justification for new legislation compared to regulations under the WMA (see Section 12, Section 13, Section 14 and Section 17 for further discussion).	
<b>Opposing Views</b>	
<p>Modulation of handling fees:</p> <ul style="list-style-type: none"> <li>Members in support state that materials have different values, sorting, baling and transportation costs and this can encourage use of better materials.</li> <li>Members against state that this would be difficult to communicate to consumers.</li> </ul>	If design elements should be legislated or outlined in regulation. Some have stated that regulation allows for easier updates to be undertaken, and that the scheme should be created through regulations under the WMA. Others state that legislation will ensure compliance. Some suggest that legislation be used only for the most critical scheme design elements.
The deposit versus refund model:	
Members in favour of the deposit model state that it is a genuine kaitiakitanga whakanaonga - product stewardship and puts producer responsibility on each container, is simpler to implement, the financial flows are simple to manage, removes the incentive for the beverage industry to minimise return rates to make large savings, can cover its own running costs better, makes full use of deposit paid by consumers, and that deposit schemes outperform refund schemes.	Members in favour of the refund model state that it has fewer negative impacts on cashflow, operational costs are more transparent and easier to manage, will allow the Managing Agency to operate on a budget, and removes the incentive to reduce return rates to increase the pool of unredeemed deposits.
Deposit value:	
Members in favour of a 10-cent deposit value state that this is important to harmonise with Australia to align with trade agreements, to minimise fraud risks, to minimise unjustified windfall, to minimise negative impacts on producers, low income consumers and small retailers, and that a high deposit value is not the main incentive for customers.	Members in favour of a 20-cent deposit value state that it does not need to be aligned with Australia's, especially since beverage prices are not the same, that it is comparable to international deposits, that Australia's deposit value is likely to increase overtime, that 20 cents will have a better lasting impact, and that it will help drive return rates.
<b>Do not Support the Following</b>	
That compaction will mean higher handling fees.	That manual and automatic refund points give out different types of refunds, identifying that that is not the case.

<b>Scheme Financials Feedback – High-Level Summary</b>	
<b>Support the Following</b>	
Label or barcode to ensure that the container is non-redeemable outside of Aotearoa New Zealand.	A single deposit rate to be used for all eligible containers.
The Managing Agency to set fees, determine payment methods and compaction ratios and implement anti-fraud measures.	The Managing Agency to use a transparent IT system to be used by all operators in the scheme.
Scheme costs to be transparent including for the handling fee.	NZ CRS legislation to allow for flexibility.
Mandating or using incentives to ensure convenience in the collection network.	Retailers to receive a handling fee if they operate a collection point.
An ongoing education campaign and public awareness.	
<b>Additional Design Considerations</b>	
The 85% return rate target to be set for each material type, rather than all materials combined.	The implementation of interim targets and continuous improvement goals.
Consideration of a cost-recovery approach.	Minimum targets for refillables.
Total scheme costs to include costs of label changes.	

## 11.17 Component(s) to be Included in the New Zealand Container Return Scheme Design

Taking the above key findings into account including feedback from stakeholders involved in the NZ CRS design, the Project Team are of the view that, the NZ CRS financial model will be based on the principle that beverage producers are required to pay for the material that is supplied and sold to market as well as paying for any additional costs associated with recycling and beneficial use. Also, on balance, the Project Team are also of the view that scheme costs (i.e., deposit, scheme fee and Advanced Material Recycling Fee) are passed through to the consumer at the point of purchase and that these costs are visible to the consumer (e.g., itemised on the shopping receipt).

There is no standard formula to determine the appropriate deposit value for a particular container return scheme. Notwithstanding this, the NZ CRS design needs to land on an appropriate deposit value. To this end the CRS Project Team considered the following:

- Deposit value for other well performing global container return schemes such as those in Europe;
- Feedback received from Australian government agencies, specifically, the deposit value of AUD10-cents was set too low;
- The outcomes of the March 2020 ConsumerNZ customer survey undertaken for the NZ CRS Project;

- Ensuring consumer engagement and motivation to recover and return containers – i.e., make it worthwhile for people to pick up containers;
- SDWG feedback; and
- Driving positive behaviour change.

Notwithstanding the outcomes of the research and feedback received from the SDWG, the Project Team on balance consider the Refund Model option to provide the consumer with a scheme that is more cost effective and efficient but that a refund model must be linked to strong scheme Governance and central government oversight (see Section 14 and Section 15 for further discussion on this matter). The reasons for the refund model include, but are not limited to, providing a smoother transition of price at the consumer level as the scheme establishes. Further, if however, it was decided by the Government of the day that the NZ CRS be controlled and managed by the beverage industry, it is then recommended that a deposit model is adopted. This is to ensure that the beverage industry is held accountable to ensuring container return rates meet and where possible exceed scheme targets as set in the bespoke NZ CRS legislative instrument.

Further, notwithstanding the original recommendation of a 20-cent deposit to be applied to the NZ CRS, on balance and taking into consideration feedback from stakeholders, the Project Team are of the view that the NZ CRS commence with a 10-cent deposit noting the following:

- The 10-cent deposit will be put in place subject to:
  - This being reviewed after 3-years (36-months) to align with the first scheme review period (see Section 13 and Section 14 for further discussion) with the deposit automatically increasing to 20-cents at year-5 (60-months) allowing for a 2-year (24-months) transition period if the 70%-year-3 (36-months) container return target is not met.
  - If the return rate does not reach 80% within 4-years (48-months) the deposit level will automatically increase to 20-cents at year-6 (72-months) allowing for a 2-year (24-months) transition period if the 80%-year-4 (48-months) container return target is not met.
  - The next deposit review will align with the 5-year (60-months) scheme review period with the deposit increasing to 20-cents if the 85%-year-5 (60-months) container return rate target is not met. Again, a 2-year (24-months) transition period will be provided for should this situation occur.
  - Thereafter, the deposit level will be reviewed every 5-years (60-months) to align with the regulated scheme review periods. The scheme review periods and the requirements for deposit level increases will be included in the bespoke NZ CRS legislative instrument.
- It is further recommended that no later than 9-months before the scheme commences a final review is undertaken by the regulatory authority to confirm the starting deposit rate of 10-cents per container is still appropriate.

It is also recommended that the deposit value is coupled with annual reviews undertaken by the Managing Agency to optimise scheme performance in keeping with what is achieved by other countries to ensure a minimum container rate of 85% is achieved.

In keeping with high performing countries and for completeness, in addition to the minimum eligible container return rate of 85%, it is also recommended that the NZ CRS design set an aspirational return rate target of  $\geq 95\%$  with appropriate legislative instrument drivers to support achieving the aspirational return rate target, specifically increasing the number of registered collection sites and or increasing the deposit. Therefore, to summarise and in keeping with high performing countries, it is recommended that the NZ CRS design will set:

- An initial minimum container deposit of NZD10-cents.
  - A 10-cent deposit will be put in place for a period of no more than 3-years to align with the first scheme review period with the deposit increasing to 20-cents at year-5 allowing

for a 2-year transition period if the 70%-year-3 container return target is not met. If the return rate does not reach 80% within 4-years (48-months) the deposit level will automatically increase to 20-cents at year-6 (72-months) allowing for a 2-year (24-months) transition period if the 80%-year-4 (48-months) container return target is not met. The next deposit review will align with the 5-year scheme review period with the deposit increasing to 20-cents if the 85%-year-5 container return rate target is not met. Again, a 2-year transition period will be provided for should this situation occur. Thereafter, the deposit level will be reviewed every 5-years to align with the regulated scheme review periods. The scheme review periods and the requirements for deposit level increases will be included in the bespoke NZ CRS legislative instrument. It is further recommended that no later than 9-months before the scheme commences a final review is undertaken by the regulatory authority to confirm the starting deposit rate of 10-cents per container is still appropriate.

- An eligible container return rate of 85% target is applied to the NZ CRS with interim annual container return targets (set at the anniversary date of the NZ CRS) of 60%-year-1 (12-months), 65%-year-2 (24-months), 70%-year-3 (36-months), 80%-year-4 (48-months), 85%-year-5 (60-months) set for the first five (5) years of scheme operation. Thereafter, a return rate target of 85% will apply with an aspirational target of 95%.
- An aspirational eligible container return rate of  $\geq 95\%$  supported by legislation that will require the minimum number of collection sites to increase from approximately 415 and enable the deposit level to be increased. Note: The Governance Board will be responsible for making recommendations to the Government of the day on what the minimum number of sites will be increased to and the appropriate increase in deposit level.

Legislative instruments will be required to enable this aspect of the NZ CRS design.

Taking the above key findings into account including feedback from stakeholders involved in the NZ CRS design, the Project Team are of the view that the following components will be included in the NZ CRS design:

- Notwithstanding the mechanisms of the existing Waste Minimisation Act 2008, new NZ CRS specific legislative instrument will be required to enable the NZ CRS design and its goals to be fully realised.
  - The reason why this is good for Aotearoa New Zealand is that establishment of bespoke legislative instruments will be 'fit-for-purpose' enabling the success of the scheme to be fully realised, rather than retrofitting into existing legislative instruments that will not enable the benefits of the scheme to be fully realised.
- The NZ CRS is a mandatory kaitiakitanga whakanaonga - product stewardship scheme that is designed and implemented to assist the Aotearoa New Zealand economy transition from a linear to a circular (make-use-return) economy - *ōhanga āmiomio*.
  - The reason why this is good for Aotearoa New Zealand is that it will (i.e., acknowledging scheme design and associated guidelines) require everyone including the producer, brand owner, importer, retailer and consumer to take responsibility of the choices made and their impact on the environment.
- The specific container return scheme legislative instruments to set a minimum eligible container return rate of 85% target is applied to the NZ CRS with interim annual container return targets (set at the anniversary date of the NZ CRS) of 60%-year-1 (12-months), 65%-year-2 (24-months), 70%-year-3 (36-months), 80%-year-4 (48-months), 85%-year-5 (60-months) set for the first five (5) years (60-months) of scheme operation. Thereafter, a return rate target of 85% will apply with an aspirational target of 95%.

- The benefit of this approach is to acknowledge the build-up period from scheme start to when the scheme reaches the optimal eligible container return rate and enable the Managing Agency to engage with consumers through measures including, for example, targeted scheme consumer marketing and engagement campaigns.
- Implementation of regulated scheme review periods comprising of two (2) initial scheme review periods to assess scheme performance and operation (e.g., eligible scheme container return rates, consumer accessibility) and strategic direction set at the end of the year-3 (36-months) and year-5 (60-months) financial periods, then every 5-years (60-months) thereafter.
  - The benefit of two (2) interim scheme review periods is to enable sufficient time for the scheme to build towards optimal performance and enable the Managing Agency to assess the schemes performance, including, for example, the interim annual container return rate targets and the accessibility of a consumer focussed network of container return facilities. Regarding the specific scheme review triggers such as the deposit level, the following will apply and align with the above interim annual container return targets - if the return rates does not reach 70% within 36-months, 80% within 48-months or 85% within 60-months, whichever occurs first, the deposit shall automatically be increased to NZD20-cents. This is on the basis that the Managing Agency has explored other improvements to scheme performance including but not limited to increasing scheme awareness and the number of collection sites (along with any increase to the container handling fee to ensure collection sites remain viable) to improve convenience. Notwithstanding the above, the recommended deposit fee of NZD10-cents shall be reviewed by the government regulatory authority (Manatū Mō Te Taiao - Ministry for the Environment) no later than 9-months prior to the scheme to confirm this as the correct starting deposit value.
- Scheme review trigger. The following will apply and align with the above interim annual container return targets - if the return rates does not reach 70% within 36-months, 80% within 48-months or 85% within 60-months, whichever occurs first.
  - The deposit shall automatically be increased to NZD20-cents. This is on the basis that the Managing Agency has explored other improvements to scheme performance including but not limited to increasing scheme awareness and the number of collection sites (along with any increase to the container handling fee to ensure collection sites remain viable) to improve convenience.
  - Notwithstanding the above, the recommended deposit fee of NZD10-cents shall be reviewed by the government regulatory authority (Manatū Mō Te Taiao - Ministry for the Environment) no later than 9-months prior to the scheme to confirm 10-cents as the correct starting deposit value.
- A flat-rate minimum deposit value will be applied to all eligible containers.
  - The reason why this is good for Aotearoa New Zealand is that a flat-rate deposit will simplify the scheme by providing equal incentive to consumers to return all containers, ensuring the scheme is fair to all producers and is simpler for the Managing Agency to administer. This avoids favouring the return of one container over another.
- A range of options for consumers to receive the deposit refund is provided for in the design of a NZ CRS, including cash, supermarket voucher (including, for example, a 2-year expiration date), donation, electronic funds transfer, other (e.g., scheme credit system, loyalty card, gift card). The scheme Managing Agency is to have flexibility to expand the range of refund options supported by robust information (e.g., consumer surveys) and in consultation with the scheme Governance Board and the Government department responsible with scheme oversight. The Managing Agency to also determine whether container return facilities are to provide all or several options to the consumer.

- The benefit of providing New Zealanders with a range of options to receive the NZ CRS deposit refund ensures the scheme is fair to all and provides consumers with choice depending on current situations (e.g., job status, involvement in charities).
- The Managing Agency to give effect to the following:
  - Setting of an appropriate handling fee including reviews of the handling fee at intervals to be determined by the Managing Agency;
    - The reason why this is beneficial for Aotearoa New Zealand is primarily for the Managing Agency to compensate those scheme participants responsible for handling and sorting eligible containers and ensure that their respective activities remain profitable to ensure service continuation.
  - The Managing Agency may approve **baling** of scheme material (e.g., plastic, aluminium) at some container return facilities where it is demonstrated that these facilities would contribute to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. To achieve this, the Managing Agency will establish a scheme baling and audit process based on robust standards and procedures, including, for example, a contractual 'Baling Services Agreement' between the Managing Agency and the container return facility. This agreement will be supported by robust standards and procedures such as Standard Operating Procedures that the container return facility must contractually abide by. Additionally, the baling process will be standardised across the scheme so that the same baling process (i.e., weight and size of bale) is used at the container return facility and the scheme MCF ensuring consistency of methodology and minimisation of fraud.
    - The benefit presented by baling at container return facilities is the ability for the Managing Agency to use existing infrastructure whilst contractually managing the expansion of the facility's role and responsibility. Additionally, this approach will support the establishment of regional/remote New Zealand collection facilities to also bale and transport material to end-markets under contract with the Managing Agency, thereby improving scheme efficiencies such as transportation of loose material (i.e., payload efficiencies). Further, the Managing Agency is best placed to establish and manage the 'Baling Services Agreement' and the supporting Standard Operating Procedures in order to track scheme material and minimise fraud.
  - The Managing Agency may also approve **compaction** of scheme material (e.g., plastic, aluminium) at some container return facilities where it is demonstrated that these facilities would contribute to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. To achieve this, the Managing Agency will determine the optimised compaction ratio that enables the scheme MCF to re-count and verify eligible scheme containers.
    - The benefit of this approach is the ability of regional/remote Aotearoa New Zealand collection facilities to reduce costs associated with transporting materials to the scheme MCF. Further, the Managing Agency is best placed to manage setting compaction ratios in order to track eligible containers and minimise fraud.
  - Utilisation of appropriate transportation logistics providers and/or back-haul arrangements, including for remote/regional areas.
    - The benefit of this approach to Aotearoa New Zealand is to support New Zealand's goal to reduce greenhouse gas emissions and progress New Zealand's obligations under the Kyoto Protocol. The added benefit is to utilise existing infrastructure to support scheme activities whilst encouraging scheme employment.

- Implement appropriate anti-fraud measures including, for example, contractual obligations, auditing and verification and reporting to closely monitor and assess performance of the logistics companies involved in the scheme. Additionally, there is also a role for the scheme regulator (i.e., central government agency responsible for the NZ CRS) and/or police in legally enforcing the breaches of the law and regulations where relevant.
  - The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud and maximise scheme compliance (e.g., integrated IT and financial systems to track eligible and financial transactions).
- Revenue generated by the sale of eligible scheme material to be passed on via the Advanced Material Recycling Fee to beverage producers to reflect the choice of container materials used.
  - The reason why this is good for Aotearoa New Zealand is that the Managing Agency is in the best position to manage the risk and promote the beneficial use of material over the long term and positively benefit producers for using materials that are more recyclable and or of greater value. This is beneficial for the New Zealand environment as it will encourage the reuse of scheme materials to New Zealand based material re-processors.
- Application of an Advanced Material Recycling Fee (AMRF) recognises that not all container packaging materials are equal with some more recyclable and valuable than others. In practice this means that materials that are difficult to recycle or problematic such as liquid paperboard may need to incur additional cost to see them successfully recycled in keeping with the outcomes of the NZ CRS design while other materials may receive a net income such as aluminium.
  - The reason why this is beneficial for Aotearoa New Zealand is that this in an open and transparent way to ensure container material choices by beverage producers are recognised and reflect any net cost or revenue that is expected to ultimately be passed on to the customer. Also, in keeping with the outcomes of the NZ CRS design, the non-financial impacts associated with container material choice must be factored in or at the very least provided for to help shape the direction and choice of container material in the future.
- Fraud mitigation measures such as a specific scheme logo applied in a way so as to minimise fraud.
  - The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
- Integration of a separate financial accounting system and Information and Communications Technology (ICT) platform to manage scheme costs.
  - The benefit of this approach for a NZ CRS is to enable the Managing Agency to have complete transparency and visibility as they relate to the successful functioning and performance of the scheme.
- Reporting of key scheme performance data.
  - The benefit of this requirement to Aotearoa New Zealand is to ensure the Managing Agency provides clear and transparent information on the efficiency and performance of the scheme whilst highlighting areas of improvement.
- Supporting the establishment of a revenue sharing arrangement (deposit or handling fee amount, including a transitional period) underpinned by clear guidelines (e.g., the default position could have the deposit shared 50/50 between both parties making sure no party is disadvantaged nor gains a windfall from the NZ CRS with any surplus returned to the ratepayer) between the local council and the MRF for eligible containers

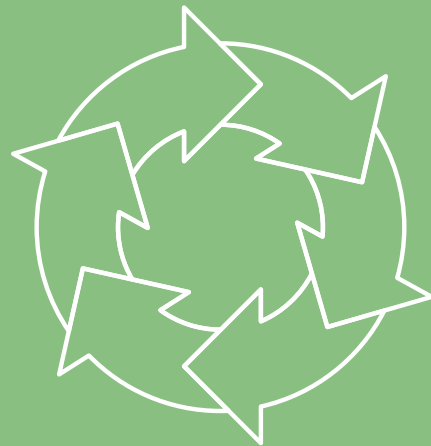
collected via kerbside recycling collections. It is recommended each Territorial Local Authority and MRF operator undertake their own negotiations (excluding the involvement of the Managing Agency) and reach agreement on revenue sharing as this recognises the different contractual arrangements that exist across NZ. It is also recommended that local authorities use the opportunity of recognising revenue from containers in the recycling bin to offset recycling collection costs incurred by ratepayers (e.g., realising savings through tendering, including, for example, greater collections per unit truck and recognition of these savings as a variable on customer rates). The reason for this is to incentivise the MRF operator to make all appropriate efforts to separate out eligible and redeem containers (in accordance with the scheme container acceptance criteria). Notwithstanding any contractual requirements between MRF operators and local councils it is recommended that a revenue sharing arrangement be established between the local council and the MRF. The revenue sharing arrangement is to be established and set at a level that will support kerbside recycling and incentivise the MRF to fund processing and maximise recovery of eligible containers.

- As noted, the benefit to Aotearoa New Zealand is to ensure that scheme funds generated from council kerbside recycling collections is appropriately shared with the MRF in recognition of the respective contractual commitments and to incentivise continual operational improvements related to the collection and sorting of eligible scheme containers.
- It is recommended that further detailed analysis is undertaken to determine if the revenue sharing is based on the deposit value or the handling fee, but not both. The detailed analysis would be undertaken to reflect the different collection types, MRF operations, capital investments and scale of these and financial viability across Aotearoa New Zealand to ensure the revenue sharing is fair and reasonable and does not result in unintended consequences or perverse outcomes for the NZ CRS.
- The default position would be sharing of the deposit value.
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SECTION 12:  
EXTENDED PRODUCER RESPONSIBILITY  
AND KAITIAKITANGA WHAKANAONGA -  
PRODUCT STEWARDSHIP

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## Section 12 Extended Producer Responsibility and Kaitiakitanga Whakanaonga - Product Stewardship

As global economies and populations grow, continued pressure is put on Papatūānuku and rawa taiao - natural resources to produce the wide range of products available on the market. As reported by the Organisation for Economic

Co-operation and Development (OECD), the total volume of material extracted or harvested worldwide reached almost 72 billion metric tonnes in 2010, a doubling since 1980 and an estimated 10-fold increase over the last century<sup>752</sup> with global material resource use exceeding 100 billion tonnes in 2017<sup>753</sup>.

The Platform for Accelerating the Circular Economy reported that the global increase in material resource use is predominantly due to several factors including global reliance on virgin materials rather than making better use of existing resources, ongoing addition to the global stock of housing, infrastructure and machinery to service on growing population and lack of end-of-life processing as well as the poor design of products. It is clear that continued population growth and demand for products and services will continue to place pressure on rawa taiao - environmental resources, and to limit this, it will require countries to implement policies that improve whakahaere rauemi - resource management and ensure sustainable materials management building on the principles of the pūnaha whakarōpū para - waste hierarchy of reduce, reuse and recycle.

*Countries have implemented Extended Producer Responsibility (EPR) schemes also known as Product Stewardship defined by the OECD as “an environmental policy approach in which a producer’s responsibility for a product is extended to the post-consumer stage of a product’s life-cycle”*

To enable this, countries have implemented Extended Producer Responsibility (EPR) systems also known as Kaitiakitanga Whakanaonga - Product Stewardship defined by the Organisation for Economic Co-operation and Development (OECD<sup>754</sup>) as “an environmental policy approach in which a producer’s responsibility for a product is extended to the post-consumer stage of a product’s life-cycle”. An EPR policy is characterised by:

1. the shifting of responsibility (physically and/or economically; fully or partially) upstream toward the producer and away from municipalities; and
2. the provision of incentives to producers to take into account environmental considerations when designing their products.

While other policy instruments tend to target a single point in the chain, EPR seeks to “integrate signals related to the environmental characteristics of products and production processes throughout the product chain”.

Typically, Kaitiakitanga Whakanaonga - Product Stewardship or Extended Producer Responsibility systems are based on “polluter pays” where the financial responsibility for the entire huringa mataora - life-cycle of the products and packaging is shifted from taxpayers and councils to producers and ultimately the consumer. As reported by the OECD, the “polluter pays” principle states that “the polluter should bear the expenses of preventing and controlling pollution to ensure that the environment is in an acceptable state,

*Product Stewardship or Extended Producer Responsibility systems are based on “polluter pays” where the financial responsibility for the entire life-cycle of the products and packaging is shifted from taxpayers and councils to producers and ultimately the consumer*

<sup>752</sup> Extended Producer Responsibility: Updated Guidance for Efficient Waste Management, OECD 2016, OECD Publishing, Paris

<sup>753</sup> The Circularity Gap Report 2020. Platform for Accelerating the Circular Economy (PACE)

<sup>754</sup> New Zealand has been a member of the OECD since 1973

irrespective of whether these expenses are incurred through a charge on pollutant emissions or in response to direct regulation”<sup>755</sup>. So, the principle of Extended Producer Responsibility as defined by the OECD is stated as “producers of products should bear a significant degree of responsibility (physical and/or financial) not only for the environmental impacts of their products downstream from the treatment and/or disposal of the product, but also for their upstream activities inherent in the selection of materials and in the design of products” and aims to encourage producers to:

- Avoid using materials that may pose risks to human health or the taiao - environment;
- Increase hangarua - recycling and whakamahi anō - reuse; and
- Redesign products and packaging and reducing the amount of post-consumer material entering ruapara - landfills.

Without, EPR systems, some products can require a significant amount of resources (e.g., reworking, deconstruction) before they can be recycled.

For the purpose of clarity, the term Extended Producer Responsibility will be used throughout this section to include and encompass Kaitiakitanga Whakanaonga - Product Stewardship principles. A further discussion on Kaitiakitanga Whakanaonga - Product Stewardship from the Aotearoa New Zealand context is explored in Section 12.1.2.1 below, noting that a Product Stewardship scheme is a more holistic approach<sup>756</sup>. It is also important to note here that the efficacy of Extended Producer Responsibility systems is linked to the design of the scheme, and, as reported by the OECD, the economic and environmental performance of these schemes can be highly disparate<sup>757</sup>. The design elements will be discussed further in Section 12.1 below.

Further, there is no one Extended Producer Responsibility system and associated governance structure that could be simply transposed into Aotearoa New Zealand to cover all material and product types. It is therefore important to evaluate each programme objectively, understand its drivers, and consider its potential applicability to Aotearoa New Zealand conditions. These drivers include, for example, the impact of a scheme on delivering positive economic, environmental, cultural and social outcomes and behaviour change.

Additionally, the role of a Managing Agency (including the Governance Board) in an EPR (and within the NZ CRS) is an important aspect as it is the entity responsible for the operation and performance of the scheme. Broadly, Managing Agencies can be not-for-profit (typically, e.g., Managing Agencies in British Columbia, Canada are legally obliged to have not-for-profit status), for-profit firms (occasionally) and government agencies (rarely). Each of these Managing Agency entities are discussed further in Section 14.

### 12.1 Extended Producer Responsibility and Container Return Schemes

The following section provides an overview of key design considerations implemented in countries across the globe to help transition economies from a linear to a circular approach whereby producers, importers, brand owners, retailers, consumers and other parties involved in the huringa mataora - life-cycle of a product accept responsibility for the environmental impacts of the products through their huringa mataora - life-cycle.

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<sup>755</sup> Extended Producer Responsibility: Updated Guidance for Efficient Waste Management, OECD 2016, OECD Publishing, Paris

<sup>756</sup> <https://www.mfe.govt.nz/publications/waste/product-stewardship-and-water-efficiency-labelling/2-product-stewardship>

<sup>757</sup> Extended Producer Responsibility: Updated Guidance for Efficient Waste Management, OECD 2016, OECD Publishing, Paris

The implementation of container return schemes is a key method in establishing and integrating Extended Producer Responsibility into economic development and assisting in the transition from a linear to ōhanga āmiomio - circular economy. The intent of a container return scheme as noted above is to incentivise producers to take responsibility for the full huringa mataora - life-cycle cost of their products with the consumer and other scheme participants also as a result, contributing to the end-of-life management of products. Further, the implementation of container return schemes within Extended Producer Responsibility also builds on the principles of the pūnaha whakarōpū para - waste hierarchy of reduce, reuse and recycle. Additionally, recent events including China National Sword and the COVID-19 global health pandemic, highlighted the delicate relationship between reliance on global post-consumer recycling markets (e.g., plastics and fibre) and the volume of post-consumer recyclables produced by economic activity. As a result, Aotearoa New Zealand along with many other countries, is now having to reassess the waste industry, including, for example, establishing guidelines for priority products which would require producers to take responsibility for the full huringa mataora - life-cycle of their products through to investigating onshore processing capacity and/or opportunities and establishing mandatory kaitiakitanga whakanaonga - product stewardship schemes – notably the NZ CRS.

It is not the intent of this section to provide an in-depth assessment of the range of global Extended Producer Responsibility (EPR) systems as each system is unique, making it difficult to compare scheme efficiencies on an, apples for apples basis. However, where possible this section provides examples of EPR systems that have been developed and implemented across the globe. Table 25 provides a high-level overview of the relationship between the drivers (e.g., administrative, economic [e.g., container return schemes], information and contractual) associated with an EPR system and which are discussed further in the following sections.

**Table 25: Extended Producer Responsibility system drivers and example outcomes**

Extended Producer Responsibility Drivers	Examples of Extended Producer Responsibility Driver Outcomes
Informative Drivers	Labelling of containers
	Local authority consultation
Agreement Drivers	Informal agreement
	Formal contracts
Administrative Drivers	Container recovery rate obligations
	Scheme recovery targets
	Mandatory versus voluntary scheme status
Economic Drivers	Container Return Schemes and their associated fees
	Advanced Material Recycling Fees
	Environmental/Eco-Fees

### 12.1.1 Extended Producer Responsibility Enabling Design Considerations

Legislation is a significant driver in the establishment of Extended Producer Responsibility (EPR) systems, with most EPRs and container return schemes being mandatory rather than voluntary<sup>758</sup>. For example, in 2016, the OECD reported that of the approximate 400 EPR systems operating globally, almost three quarters were established since 2001 with small consumer electronic equipment comprising the largest number of schemes, followed by packaging and tyres, end of life vehicles, lead-acid batteries and a range of other products. Of the 400 schemes reported by the OECD, approximately three quarters used

<sup>758</sup> Extended Producer Responsibility: Updated Guidance for Efficient Waste Management, OECD 2016, OECD Publishing, Paris

take-back requirements, with advance disposal fees and deposits accounting for the rest. It was further reported that some organisations have set up their own EPR system but that in most cases producers collectively established EPR systems managed by Producer Responsibility Organisations (PROs) (the NZ CRS equivalent organisation is the Managing Agency).

In order for an effective EPR system to be established, the OECD released in 2001 the guiding EPR principles for governments which noted that these schemes should provide the following:

1. Provide producers with incentives to change product designs.
2. Stimulate innovations.
3. Take a huringa mataora – life-cycle approach.
4. Clearly define responsibilities.
5. Chose flexible policy instruments adapted to the particular product and waste stream.

In addition to the above-mentioned guiding principles, the objective and scope of the EPR should be clearly defined including:

- Producers of the products should be identified;
- Establishment of reporting and monitoring;
- Development of appropriate enforcement mechanisms and sanctions;
- Increase the level of the EPR system ambition;
- Broadening the scope of products covered;
- Internalising environmental costs; and
- Transparency – require the EPR system to make information available to assess scheme performance and to identify ways in which the scheme can be made more efficient and effective.

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*To enable the successful establishment of EPR systems, the design and governance of the system is key to their performance, for example setting of targets, compliance monitoring, financial management (including the management of free-riding).*

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The above guiding EPR principles as well as the objectives and scope requirements provide a clear foundation on which the NZ CRS is to be designed and implemented, ensuring that the scheme gives effect to the principles of Extended Producer Responsibility and to help Aotearoa New Zealand transition from a linear economy to ōhanga āmiomio - circular economy.

To enable the successful establishment of EPR systems (including container return schemes), the design and governance of the system is key to their performance, for example, setting of targets, compliance monitoring, financial management (including the management of free-riding). The OECD as part of their EPR guidance documentation notes the following items as key matters to be addressed during the design of EPRs, and which will be important matters in the design and implementation of a NZ CRS, including:

- In mandatory schemes, governments to establish consistent and credible means for enforcing EPR obligations (including registers of producers, official accreditation of producer responsibility organisations);
- EPR policy targets to be reviewed periodically and adjusted taking account of changes in market conditions and technology;
- Regular auditing of the EPR system noting this should be undertaken by independent practitioners;
- Governments to identify ways in which the EPR can be financed in a sustainable way; and
- Free-riding which is a challenge to many EPR systems, should be addressed through peer pressure and strict enforcement.

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*Legislation is a significant driver in the establishment of EPR systems, with most EPRs being mandatory rather than voluntary.*

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As noted, free-riding (defined as those producers who benefit from EPR systems without contributing their share of the system costs) is a challenge to many EPR systems, particularly, for example, where

online sales and the possibilities for free-riding can arise. For example, consumers now have an ever-increasing opportunity to purchase goods via online retailing which have provided consumers with greater market access and lower product prices. In such cases it has been reported that the effect of free-riding on EPR systems is generally associated with products that are placed on the market and that are not accompanied, or partially accompanied by the required EPR fees<sup>759</sup>. For example, a consumer may purchase goods online from organisations without a legal entity in Aotearoa New Zealand (i.e., the consumer’s country of purchase) which are then typically directly shipped to the consumer. This process avoids the importer in the supply chain which would commonly be responsible for ensuring imported products pass on the required EPR fees. Because of this EPR systems have difficulties in identifying the range of online sellers and executing enforcement actions. While there was limited available information discussing the effects of online sales on EPR systems, reports of global online sale trends highlight a rapidly growing focus of consumers to online sales with online sales in the United States of America growing approximately 9-times faster than traditional in-store sales. Similarly, online sales in Europe has also grown significantly with online sales in 2015 reported at approximately EUR201billion to EUR233billion in 2016. Figure 49 and Figure 50 below illustrate the total online sales as a proportion of total sales in the United States of America and from across several European countries.

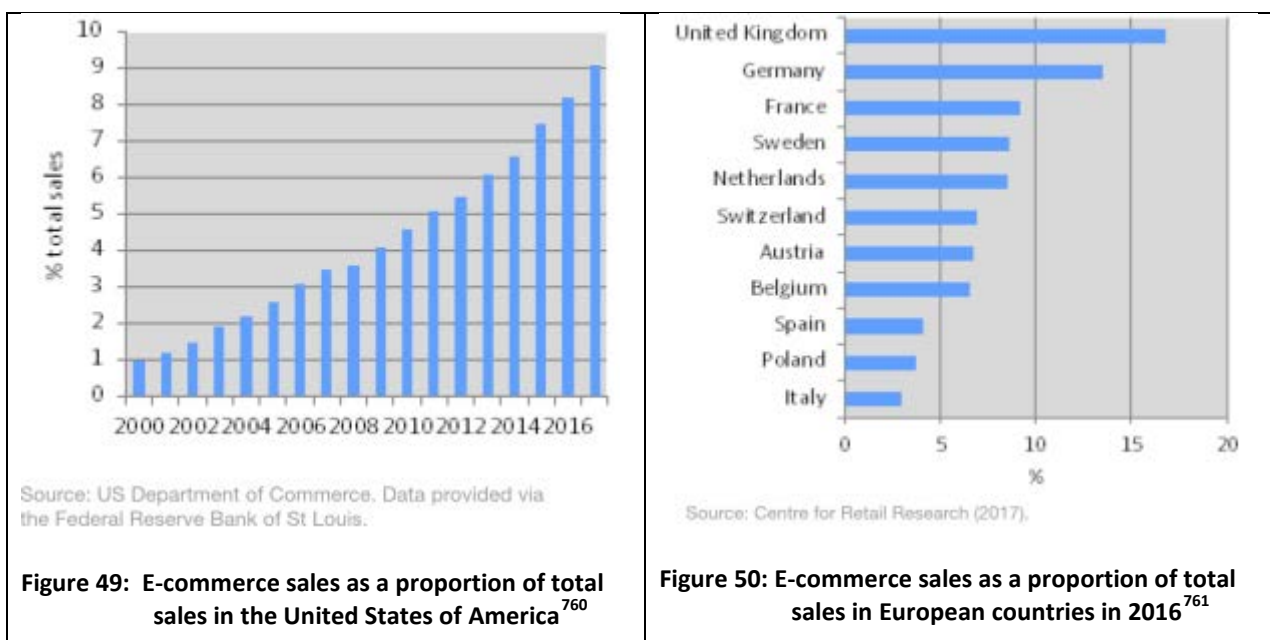


Figure 49: E-commerce sales as a proportion of total sales in the United States of America<sup>760</sup>

Figure 50: E-commerce sales as a proportion of total sales in European countries in 2016<sup>761</sup>

Given the paucity of information regarding free-riding and the impact of online sales on EPR systems, the OECD has however set out several mechanisms to address free-riding<sup>762, 763</sup>, including:

- Awareness raising to ensure online sellers are aware of their EPR obligations (e.g., e-commerce codes of practice or increased outreach by EPR scheme Managing Agencies);
- Improved enforcement through the establishment of a single register for producers including a mechanism to identify and report suspected free-riders and international coordination to identify and share knowledge on known and suspected free-riders; and
- Regulatory measures which may include coordination of EPR registration processes or potentially the requirement for producers to display details of their EPR scheme registration (e.g., unique scheme identification number).

<sup>759</sup> Extended Producer Responsibility and the Impact of Online Sales, 2018

<sup>760</sup> Extended Producer Responsibility and the Impact of Online Sales, 2018

<sup>761</sup> Extended Producer Responsibility and the Impact of Online Sales – Environment Working Paper No. 142, 2019

<sup>762</sup> Extended Producer Responsibility: Updated Guidance for Efficient Waste Management, OECD 2016, OECD Publishing, Paris

<sup>763</sup> Extended Producer Responsibility and the Impact of Online Sales – Environment Working Paper No. 142, 2019

Consequently, it is most probable that online sales will continue to increase globally and likely within Aotearoa New Zealand as consumers have greater access to a wider range of products and retailers. While there is currently insufficient information to comment on total e-commerce sales by product type in Aotearoa New Zealand, and as a result of the recent COVID-19 pandemic, it is probable that the issue of free-riding is one that will require attention more broadly and in regards to the implementation of a NZ CRS.

There was limited information on this matter at the time of writing, and the OECD notes further work is required to better understand the issues of online sales and free-riding in EPR systems.

Further, the OECD notes that as the recycling and waste management industries have grown, the “potential financial gains for producers, as well as the additional costs to society that result from collusion among producers and other forms of anti-competitive behaviour, have become more significant”. To minimise such anti-competitive behaviours, the OECD notes the following areas to be considered in the design of EPR systems, such as:

- Concerns are still present regarding collusion among producers and about the potential abuse of agreements between producer responsibility organisations and companies involved in downstream operations; and
- Procurement of services to be transparent and carried out through competitive tenders.

Lastly, the guidance documentation for the setup of EPR systems, notes that “better internalisation of end-of-life costs and strict enforcement would strengthen incentives for improving the eco-design of products and packaging”. To enable this, the OECD recommends setting fees at a level where they recover the full cost of the end-of-life management of the products covered by the EPR system as a key measure in the design of an EPR system. For example, three key measures are provided to enable improved product design and accountability for end-of-life product management:

1. Producer responsibility implemented at the level of individual producers to incentivise eco-design of products.
2. Producer fees should be closely linked to the actual end-of-life treatment costs of their products (i.e., costs to collect, consolidate and beneficially use materials), rather than fixed fees and/or modulated fees that differ according to the specific design features that make products more easily recyclable (e.g., Advanced Material Recycling Fee – see Section 11 for further information on the fees application).
3. Where products are globally traded, better eco-design incentives could be achieved by harmonising environmentally sensitive design through legislation or financial incentives (e.g., environmental/eco-fee).

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*The setup of EPR systems, notes that “better internalisation of end-of-life costs and strict enforcement would strengthen incentives for improving the eco-design of products and packaging”*

*To enable this, the OECD recommends setting fees at a level where they recover the full cost of the end-of-life management of the products covered by the EPR system as a key measure in the design of an EPR system*

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Therefore, the above discussion sets out the broad foundation and specific elements of Extended Producer Responsibility for which a container return scheme is an enabling driver. Acknowledging this information, the design and implementation of a NZ CRS will give effect to Extended Producer Responsibility and support the New Zealand Government in efforts in a post COVID-19 environment to transition from a linear economy to *ōhanga āmiomio* - circular economy. Additionally, the design and implementation of an NZ CRS based on the principles of Extended Producer Responsibility will where possible, support investigating onshore processing capacity, promotion of refillables (i.e., reusables) and generation of employment opportunities.



## 12.1.2 Extended Producer Responsibility Enabling Policy Drivers

Across the Extended Producer Responsibility (EPR) systems, there are several key policy drivers which can be implemented either individually or in combination to enable producers to take responsibility for their products and packaging end-of-life management:

- Product take-back requirements – producers and/or retailer taking responsibility for managing the end-of-life recycling of their products or materials. In Aotearoa New Zealand examples of take-back schemes<sup>764</sup> include Resene Paints, Vodafone and Spark, however these schemes are voluntary at present.
- Economic and market-based incentives:
  - Deposit refund – a deposit paid by the consumer at the time of purchase which is refunded when the item is returned.
  - Advanced Disposal Fees (ADF) – fees levied on certain products based on the estimated costs of collection and treatment with fees used to finance post-consumer treatment of specified products.
  - Material taxes – taxing specific materials (or materials that are difficult to recycle or contain environmentally harmful elements) to incentivise the use of other material including recycled or less environmentally harmful material. The OECD recommends the tax be allocated for the collection, sorting and treatment of post-consumer products.
  - Combination tax/subsidy – a tax paid by producers to subsidise waste treatment, by providing producers with incentives to alter their material inputs and product design whilst providing a financing mechanism to support recycling and treatment.
- Regulations and performance standards – including requirements on the use of minimum recycled content to encourage, for example, greater take-back of products and packaging. The OECD notes that when used in combination with a tax, this can incentivise producers to redesign products.
- Information – aims to support EPR system by raising public awareness through measures such as product labelling, communications to consumers about the EPR system and the importance of waste separation and informing the consumers about collection systems (e.g., resource recovery centres).

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*To help achieve New Zealand's transition from a linear to a circular economy, the government acknowledges the need for regulated product stewardship schemes to be co-designed as well as ensuring robust assessments are carried out into onshore recycling infrastructure to ensure New Zealand has the capacity to support regulated product stewardship, including the collection and reporting of improved waste data*

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Therefore, it is clear that EPR systems involve a multi-faceted approach and so the design of a bespoke NZ CRS will be shaped by a number of factors to ensure the design is consumer focussed and delivers what is best for Aotearoa New Zealand.

### 12.1.2.1 Extended Producer Responsibility in New Zealand

The New Zealand Manatū Mō Te Taiao - Ministry for the Environment (MfE) defines Kaitiakitanga Whakanaonga - Product Stewardship (i.e., Extended Producer Responsibility) as “an approach whereby producers, importers, brand owners, retailers, consumers and other parties involved in the huringa mataora – life-cycle of a product accept a responsibility for the environmental impacts of the products through their life-cycle. This can include upstream impacts from the choice of materials and the manufacturing process, through to downstream impacts from the use and disposal of products”. The Manatū Mō Te Taiao - Ministry for the Environment also notes the term Extended Producer Responsibility is used in a similar way to Kaitiakitanga Whakanaonga - Product Stewardship, although “usually with a narrower focus on the responsibilities of producers”. It is also important to note at this

<sup>764</sup> <https://www.mfe.govt.nz/publications/waste/product-stewardship-and-water-efficiency-labelling/2-product-stewardship>

point, that schemes established abroad may influence Aotearoa New Zealand export products as these products may be required to comply with specific jurisdictional regulatory requirements. Similarly, Aotearoa New Zealand may import products that have been designed to meet requirements of other global EPR systems and which may make recovery and recycling easier<sup>765</sup>. So, while as a nation Aotearoa New Zealand transitions from a linear to a circular economy, it needs to be acknowledged and recognised that Aotearoa New Zealand is a global citizen and must therefore contribute to and abide by regulations set by our global partners to ensure our products meet specific requirements.

To help achieve Aotearoa New Zealand's transition from a linear to ōhanga āmiomio - circular economy, the government acknowledges the need for regulated kaitiakitanga whakanaonga - product stewardship schemes to be co-designed<sup>766</sup>. There is also a need to carry out assessments into onshore recycling infrastructure to ensure Aotearoa New Zealand has the capacity to support regulated kaitiakitanga whakanaonga - product stewardship (e.g., the NZ CRS), including the collection and reporting of improved waste data (see Section 17 for further discussion).

Aotearoa New Zealand currently has a voluntary approach to kaitiakitanga whakanaonga - product stewardship although the Waste Minimisation Act 2008 enables the government to declare priority products (i.e., General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020) meaning a mandatory kaitiakitanga whakanaonga - product stewardship scheme would be established (refer to Section 2 for further information on specific voluntary and regulated kaitiakitanga whakanaonga - product stewardship schemes in Aotearoa New Zealand).

As discussed in Section 2, to encourage the shift towards a more resource efficient economy, the New Zealand Government is supporting kaitiakitanga whakanaonga - product stewardship to help design waste out of our economy and transition to ōhanga āmiomio - circular economy. Kaitiakitanga Whakanaonga - Product Stewardship is “when people and businesses take responsibility for the huringa mataora – life-cycle impacts of their products, either voluntarily or in response to regulatory tools”<sup>767</sup>.

In May 2018, WasteMINZ<sup>768</sup> (Aotearoa New Zealand's largest representative body of the waste, resource recovery and contaminated land sectors) surveyed their membership to determine their views on a range of matters including kaitiakitanga whakanaonga - product stewardship and which waste streams were considered highest priority for kaitiakitanga whakanaonga - product stewardship intervention. Of the 101 respondents from member organisations and individuals:

- 93% supported the concept that well-designed kaitiakitanga whakanaonga - product stewardship schemes can build resilience into Aotearoa New Zealand's waste and recycling systems to mitigate economic issues;
- 96% agreed in principle that they support the designation of priority product status for problematic waste streams (i.e., tyres, e-waste, batteries, packaging, agrichemicals and farm plastics, refrigerants and other synthetic greenhouse gases, paint); and
- 83% supported, in principle, the establishment of container deposit schemes that are not simply limited to beverage containers. It is also important to note, that of the respondents that did not support a container deposit scheme, three (3) were reported to note that these schemes were economically inefficient, mere greenwashing or that the “problem” the container deposit scheme was to address needed to be defined first. Of those respondents who were unsure

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<sup>765</sup> <https://www.mfe.govt.nz/publications/waste/product-stewardship-and-water-efficiency-labelling/2-product-stewardship>

<sup>766</sup> Proposed priority products and priority product stewardship scheme guidelines consultation: summary, Ministry for the Environment

<sup>767</sup> Ministry for the Environment (2019). Proposed priority products and priority product stewardship scheme guidelines: Consultation document. Wellington: Ministry for the Environment.

<sup>768</sup> Product Stewardship: What Our Members Think, WasteMINZ 2018

whether they supported a container deposit scheme, thirteen (13) respondents were reported to need more information about the scheme.

The inclusion of glass in container return schemes has been a contentious matter across many global schemes, including in the design of the NZ CRS. Some reasons for this include:

- Increased cost to products (i.e., deposit and producer fee, administration costs) and the impact this may have on producers, retailers and consumers and sales volumes;
- Kerbside collections provide a convenient way to capture containers;
- Kerbside collection costs are typically ratepayer funded and therefore minimise costs to beverage producers;
- Removing beverage containers from kerbside collections still leaves behind non-beverage glass; and
- Better glass capture rates within kerbside collection systems.

As such, it is considered an important matter to address by understanding the current state of the voluntary New Zealand Glass Packaging Forum (NZGPF) and the NZGPF's reported glass recycling rates.

The Scottish Parliament recently announced its decision to include glass in their Deposit Return Scheme (DRS) despite significant opposition from several stakeholders in the glass sector. The NZ CRS Project Team have been liaising directly with the Programme Manager overseeing the Scotland scheme to establish the factors as to why glass was included in the scheme, despite this opposition. This is discussed in Section 12.1.2.1.2 below.

#### 12.1.2.1.1 Glass Packaging Forum Case Study

The New Zealand Glass Packaging Forum (NZGPF) Product Stewardship scheme was established in 2005 to recover and beneficially use glass with the aim of zero disposal of glass to landfill. The purpose of the NZGPF is "To connect businesses that manufacture, import, fill and sell glass-packaged consumer goods with those that collect and recycle glass to enable glass bottles and jars to be returned to the furnace or made into alternative products, with the aim of zero container glass to landfill"<sup>769</sup>.

The NZGPF Product Stewardship scheme is a voluntary user pays scheme whereby members of the scheme pay a levy of up to NZD\$3.90 per tonne for the volume of glass they use in the market<sup>770</sup>. The scheme is currently managed by the 3R Group Limited with the latest NZGPF Accreditation Report (2018/19) reporting the following scheme performance summary<sup>771</sup>:

- |                                  |               |
|----------------------------------|---------------|
| • Total Glass to Market          | 230,262tonnes |
| • Total Glass Captured           | 168,384tonnes |
| • Glass Bottle to Bottle         | 119,387tonnes |
| • Glass to Aggregate             | 24,092tonnes  |
| • Glass to Stockpile             | 10,347tonnes  |
| • Other                          | 14,558tonnes  |
| • Total Glass Capture Rate       | 73%           |
| • Bottle to Bottle (Recycled)    | 71%           |
| • Glass to Roding and Drainage   | 14%           |
| • Glass to Landfill              | 9%            |
| • Glass to stockpile / collected | 6%            |

<sup>769</sup> [http://ovbshwosp3y3lle2ft6zyha-wpengine.netdna-ssl.com/wp-content/uploads/2019/07/GPF\\_Report\\_2018\\_FINAL.pdf](http://ovbshwosp3y3lle2ft6zyha-wpengine.netdna-ssl.com/wp-content/uploads/2019/07/GPF_Report_2018_FINAL.pdf)

<sup>770</sup> Briefing Note for Glass Packaging Forum Members – publicly available: <http://www.wineworks.co.nz/wp-content/uploads/2013/10/Briefing-Note-for-Glass-Packaging-Forum-Members-Jan-2013.pdf>

<sup>771</sup> Glass Packaging Forum Product Stewardship Accreditation Report 2018-2019

The NZGPF works with a range of businesses and local authorities to promote and advance the scheme and funds a number of recycling initiatives. A recent example is funding allocated to Tauranga City Council in support of the new kerbside glass collection service<sup>772</sup>. The annual cost to operate the NZGPF scheme for 2018/19 was NZD\$864,324<sup>773</sup>.

The NZGPF Accreditation Report for 2018/19 reports the total glass capture rate is reported as 73%, derived by dividing 'Total Glass Captured' by 'Total Glass placed into the Market' (168,384tonnes/230,262tonnes). Note: Total Glass refers to both the quantity of beverage and non-beverage glass. The total glass that is used to recycle into new bottles is reported as 119,387 tonnes per year or 71% based on dividing 'total glass bottle to bottle' divided by 'total glass captured'.

The scheme has set a target to divert annually, 82% of container glass placed into the market by 2024.

Based on the Extended Producer Responsibility principles discussed in this section and applying these to the NZGPF Glass Product Stewardship Scheme, it would require the producers to pay a levy or similar to fund the full net costs associated with end-of-life management of the waste packaging which can include disamenity costs associated with littering.

While it is not within the scope or appropriate for the NZ CRS Design Project including members of the Scheme Design Working Group (SDWG) to audit or validate compliance of the NZGPF scheme with the principles and requirements of an Extended Producer Responsibility Scheme, there is an expectation that the NZ CRS Project comment on the performance of the current scheme, specifically the benefits of including or excluding glass containers from the NZ CRS design. For example, feedback from stakeholders included the following statement:

*"Glass currently has an approved stewardship scheme under the Act. The research team must provide evidenced based data that provides assurance that the cost of implementing glass CDS outweighs the current stewardship scheme"*

To this end we make the following comments:

**1. There was widespread support from the Scheme Design Working Group to include all containers (including glass).**

- At the time of writing, Section 3 reached a design component position that all containers should be included in the scheme unless there was a specific valid reason to exclude a particular product or material. Feedback received from the SDWG for Section 3 showed widespread support to include all containers in the scheme, including glass.

**2. The total glass capture rate for 2018/19 has been calculated as 60%.**

- The NZGPF Accreditation Report for 2018/19 stipulates that glass capture rate is 73%. Data sources used by the NZGPF are not available to the NZ CRS Project owing to commercial sensitivity which is fully understandable. This has led to the NZ CRS Project having to determine its own method and calculation to arrive at the glass capture rate, as follows:

**Data Inputs**

- a. NZ CRS Project document 'Assumptions for deriving single-use container volumes and weights' (Appendix I). This is based on point of sales data and analysis provided by GS1 and alcohol consumption data from Statistics New Zealand (Stats NZ) – refer Section 3.
- b. Results from a survey commissioned by the NZ CRS Project in March 2020<sup>774</sup> across all Aotearoa New Zealand Territorial Local Authorities to determine annual tonnage and

<sup>772</sup> NZ CRS Project Territorial Local Authority Survey of New Zealand Kerbside collections March 2020

<sup>773</sup> Glass Packaging Forum Annual Report 2018-2019

<sup>774</sup> NZ CRS Project Territorial Local Authority Survey of New Zealand Kerbside collections March 2020

composition of kerbside recyclables. This survey was undertaken by WasteMINZ and analysed by PwC.

- c. Detailed kerbside bin data composition (rubbish and recycling) provided by WasteMINZ. This is from a survey undertaken in 2019 (Rethinking Rubbish and Recycling<sup>775</sup>) of approximately 875 households across Aotearoa New Zealand<sup>776</sup>.

#### Calculation Method

- d. The calculation method used to arrive at 60% glass capture rate was as follows:
  - i. NZGPF total annual volume of glass recovered = 168,384tonnes (NZGPF Report<sup>777</sup>).
  - ii. Annual beverage container glass tonnage = 250,113tonnes (item '2a' above).
  - iii. Annual total glass captured from kerbside recycling = 144,348tonnes (item '2b').
  - iv. Annual non-beverage glass containers (domestic) is estimated at 28,500tonnes (item '2c').
  - v. Note: Annual non-beverage glass containers (commercial) is not included. No reliable data could be sourced and therefore, the calculation of 60% excludes the contribution of commercial volumes of non-beverage glass.
  - vi. Total glass to market = 250,113tonnes beverage glass + 28,500tonnes non-beverage glass (residential) = 278,613tonnes per year (excluding non-beverage commercial glass).
  - vii. Glass capture rate = 168,384tonnes recovered divided by 278,613 = 60.4%.
  - viii. The addition of non-beverage commercial glass containers would reduce the glass capture rate to below 60%. For example, if commercial non-beverage glass = between 5,000tonnes the glass capture rate would be  $(168,384 \text{ tonnes} / (278,613 \text{ tonnes} + 5,000 \text{ tonnes})) = 59\%$

### 3. NZGPF Voluntary Glass Scheme excludes the cost of collections, a requirement of an Extended Producer Responsibility scheme, estimated at \$55million per year.

- The cost to provide a glass only collection from kerbside collections across Aotearoa New Zealand is approximately NZD\$382 per tonne<sup>778</sup> or an annual cost of approximately NZD\$55million (144,348 tonnes x NZD\$382 per tonne). This cost is currently met by councils on behalf of their ratepayers. This cost excludes the cost of glass collections at Resource Recovery Parks and other glass recovery systems from hospitality and industry and the cost to deliver this to a central processing facility

### 4. The estimated kerbside collection cost for glass beverage container is equivalent to approximately NZD10.29-cents per container.

#### Calculation Method:

- a. Tonnage of beverage glass in domestic kerbside recycling collections = 129,582tonnes (refer '2b' above) x NZD\$382 per tonne to collect = NZD\$49,500,324
- b. Total glass beverage container weight = 250,113tonnes<sup>779</sup>
- c. Total glass beverage container number = 928,182,000<sup>780</sup>

<sup>775</sup> Rethinking Rubbish and Recycling May 2020. Prepared for WasteMINZ TAO Forum. Sunshine Yates Consulting Limited

<sup>776</sup> [http://ovbshwosp3y3lle2ft6zyha-wpengine.netdna-ssl.com/wp-content/uploads/2019/07/GPF\\_Report\\_2018\\_FINAL.pdf](http://ovbshwosp3y3lle2ft6zyha-wpengine.netdna-ssl.com/wp-content/uploads/2019/07/GPF_Report_2018_FINAL.pdf)

<sup>777</sup> NZ CRS Project Territorial Local Authority Survey of New Zealand Kerbside collections March 2020

<sup>778</sup> PwC analysis. Territorial Local Authority's provided actual cost of collection data (commercial in confidence) to PwC. Average value is calculated based on information received to date from districts that are not comingled weighted to glass recycled by Territorial Local Authority.

<sup>779</sup> NZ CRS Project document 'Assumptions for deriving single-use container volumes and weights' Section 4, Tranche 2 (Note, Section 4 will be updated with model data)

- d. Proportionally, this is equivalent to approximately 480,885,360 containers present in kerbside recycling collections.
- e. NZD\$49,500,324 divided by 480,885,360 = \$0.1029 per container.

**5. The bottle to bottle recycling rate is estimated at 48%.**

- The amount of beverage glass recovered from single-use beverage containers that is recycled back into bottles as a proportion of total beverage glass placed into the market is estimated at 48% (119,387tonnes divided by 250,113tonnes).

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*The Directive also recognises that the wide range of reduction measures (e.g., deposit return schemes, extended producer responsibility, support for reusable solutions, ambitious reduction targets and enforcement of bans) are interconnected and support the transition from a linear to a circular economy*

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**6. There is an excess of glass material.**

- The supply of glass into the market exceeds current processing capacity within Aotearoa New Zealand to convert this back into glass containers (beverage and non-beverage). This problem will not be resolved by either a NZ CRS or an Extended Producer Responsibility scheme but requires a shift in keeping with the principles and application of the pūnaha whakarōpū para - waste hierarchy, specifically exploring how glass can be reduced or reused. In keeping with the key outcomes of the NZ CRS Design Project, this would include exploring what impact a significant shift towards refilling (i.e. reusables) would have on overall supply and demand of glass production. This is discussed in Section 12.1.4.

**7. The amount of glass ending up in landfill and stockpiles may be greater than what has been reported in the NZGPF Accreditation Report (2018/19).**

- In 2018/19 a total of 168,384tonnes of glass was recovered. The composition of this is reported as follows:
  - Glass Bottle to Bottle 119,387tonnes
  - Glass to Aggregate 24,092tonnes
  - Glass to Stockpile 10,347tonnes
  - Other 14,558tonnes
  - **TOTAL 168,384tonnes**
- Based on the NZ CRS Project calculations this leaves a balance of 110,229 tonnes unaccounted for (278,613tonnes minus 168,384tonnes). Given that glass returned for beneficial use is presumably supported by commercial transactions, this suggests that the balance of the unaccounted glass has largely gone to landfill/cleanfill, additional stockpiling and or disposed to the environment as litter. Further work (outside the scope of the NZ CRS Design Project) would be required to confirm this.

**8. Cost Benefit Analysis.**

- The NZ CRS design is subject to a cost-benefit analysis and as such will consider the scenario of including and excluding glass beverage containers.

**12.1.2.1.2 Scotland Container Return Scheme and the Inclusion of Glass**

In May 2020, the Scottish Parliament announced the approval of the Scottish Government’s Deposit Return Scheme with the regulations now becoming law and confirmation of a scheme ‘go-live’ date of 01 July 2022. The scheme will include all drinks (both alcoholic and non-alcoholic [e.g., soft-drinks and milk]) in PET plastic, steel and aluminium and glass (including wine and beer bottles, and premium soft

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<sup>780</sup> NZ CRS Project document ‘Assumptions for deriving single-use container volumes and weights’ Section 4, Tranche 2 (Note, Section 4 will be updated with model data)

drinks) with container sizes from 50mL to 3L included in the scheme. Consumers will pay a 20p (approximately NZD\$0.40) deposit per eligible scheme container which is fully refundable when returned to a retailer (i.e., container return facility) for recycling.

It is important to note that the decision to include glass in the scheme was due to the four (4) scheme objectives:

1. Improving recycling quantity.
2. Improving recycling quality.
3. Encouraging wider behaviour change around materials.
4. Delivering maximum economic and societal benefit for Scotland during the transition to a low carbon world.<sup>781</sup>

The scheme is expected to increase the recycling of glass bottles from approximately 65% at present to 90% over a 3-year period. Despite opposition to the inclusion of glass in the scheme from parties such as Owens-Illinois (O-I) Glass Limited<sup>782</sup>, British Glass<sup>783</sup>, The Scottish Beer & Pub Association<sup>784</sup>, The Food and Drink Federation Scotland<sup>785</sup> and Wine and Spirit Trade Association<sup>786</sup> for reasons such as, the scheme will reduce recycling rates, increased costs to consumers, reduction in clear glass volumes, upsizing and potential product switching, increased costs to retailers and throughout the supply chain and higher rates to glass recycling is achieved through kerbside collections, a survey commissioned by Zero Waste Scotland reported that 85% of people in Scotland noted that glass should be in the scheme, compared to 8% which noted glass should be excluded<sup>787</sup>. Additionally, it was reported in the scheme business regulatory impact assessment that the inclusion of glass in the scheme will encourage consumers to return glass drink containers for recycling due to a value placed on the containers and reduce the likelihood of these containers being littered<sup>788</sup>. In addition to consumer support, the scheme business case also noted that one of the most significant benefits of the container return scheme is the improvement in the quality of materials generated for recycling as the scheme collection method almost eliminates the potential for contamination<sup>789</sup>.

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*To support and facilitate the development of reuse schemes and to provide consumers with a conscious choice between single-use plastic packaging and more sustainable options, government policy is needed to support this process*

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Therefore, taking the above Extended Producer Responsibility discussion into consideration, the design and implementation of a NZ CRS acknowledges the growing awareness of the continued pressure Aotearoa New Zealand, along with other global economies are placing on rawa taiao - natural resources to produce the wide range of products currently available on the market. As such, the NZ CRS will be a key step towards Aotearoa New Zealand taking greater responsibility for the products produced and consumed including the end-of-life management of the products using the principles of the pūnaha whakarōpū para - waste hierarchy – reduce, reuse, recycle.

### 12.1.3 Extended Producer Responsibility in the European Union

The following section provides a summary of the European Union Single-Use Plastics Directive and its interconnection with broader Extended Producer Responsibility (EPR) objectives, including recycling

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<sup>781</sup> <https://www.gov.scot/publications/deposit-return-scheme-scotland-full-business-case-stage-1/> (page 12)

<sup>782</sup> [https://www.parliament.scot/S5\\_Environment/Inquiries/ECCLR\\_DRS043\\_WritSub\\_O-I\\_Glass\\_Limited.pdf](https://www.parliament.scot/S5_Environment/Inquiries/ECCLR_DRS043_WritSub_O-I_Glass_Limited.pdf)

<sup>783</sup> British Glass: Recycling DRS for Scotland and glass key messages

<sup>784</sup> [https://www.parliament.scot/S5\\_Environment/Inquiries/ECCLR\\_DRS055\\_WritSub\\_SBPA.pdf](https://www.parliament.scot/S5_Environment/Inquiries/ECCLR_DRS055_WritSub_SBPA.pdf)

<sup>785</sup> [https://www.parliament.scot/S5\\_Environment/Inquiries/ECCLR\\_DRS030\\_WritSub\\_FDF\\_Scotland.pdf](https://www.parliament.scot/S5_Environment/Inquiries/ECCLR_DRS030_WritSub_FDF_Scotland.pdf)

<sup>786</sup> <https://www.scottishgrocer.co.uk/2020/04/01/deposit-return-is-delayed-to-2022/>

<sup>787</sup> [www.zerowastescotland.org.uk/press-release/scots-say-glass-should-be-20p-deposit-return-scheme](http://www.zerowastescotland.org.uk/press-release/scots-say-glass-should-be-20p-deposit-return-scheme)

<sup>788</sup> [www.gov.scot/publications/deposit-return-scheme-scotland-full-business-regulatory-impact-assessment/pages/2/](https://www.gov.scot/publications/deposit-return-scheme-scotland-full-business-regulatory-impact-assessment/pages/2/)

<sup>789</sup> [www.gov.scot/publications/deposit-return-scheme-scotland-full-business-case-stage-1/](https://www.gov.scot/publications/deposit-return-scheme-scotland-full-business-case-stage-1/)

targets, recycled content targets in single-use containers and ensuring that reusable alternatives to single-use plastic products are made available at the point of sale to the consumer.

### 12.1.3.1 European Union Single-Use Plastics Directive

In early 2019, the European Parliament comprising 28 member countries<sup>790</sup> approved the ‘Single-Use Plastics Directive’<sup>791</sup> to ban single-use plastic<sup>792</sup> (including plastic bottles and containers, and plastic items made of bio-based as well as biodegradable single-use plastics) with the Directive to be transposed and implemented into European Union Member State legislation by mid-2021. The intent of the Single-Use Plastics Directive is to put more responsibility on plastic producers and implement new recycling targets for European Union member States. The Directive also recognises that plastics have a high function and are relatively cost efficient but are also being used in short-lived applications “which are not designed for reuse or cost-effective recycling, meaning that related production and consumption patterns have become increasingly inefficient and linear”. To help mitigate this, the ‘Single-Use Plastics Directive’ notes that the “steady increase in plastic waste generation and the leakage of plastic waste into the environment, in particular the marine environment, must be tackled in order to achieve a circular life for plastics”.

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*To help enable prioritisation to be given to reusable products, the Directive notes Member States to take necessary measures to achieve an ambitious and sustained reduction in the consumption of single-use plastic products, to achieve a measurable quantitative reduction in the consumption of these products.*

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Broadly, this European Union Directive is a major step forward towards reducing the production and consumption of single-use plastics whilst encouraging the consumer along with producers to take greater responsibility in the use and disposal of single-use plastics. Further, the implementation of the Directive and the strategy to reduce the use of single-use plastic may provide Europe with a significant opportunity to create jobs and new markets, stimulate new and innovative business and technologies whilst helping to reduce environmental impact. The Directive also recognises that the wide range of reduction measures (e.g., deposit return schemes, extended producer responsibility, support for reusable solutions, ambitious reduction targets and enforcement of bans) are interconnected and support the transition from a linear to a circular economy.

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*The European Union Directive is a major step forward towards reducing the production and consumption of single-use plastics whilst encouraging the consumer, along with producers, to take greater responsibility in the use and disposal of single-use plastics.*

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Focussing on products of relevance to an NZ CRS, the Directive establishes different measures that apply to different product categories, depending on various factors, such as the availability of alternatives to the products (e.g., reusables), including complete bans to the reduction of consumption of key single-use items and the implementation of Extended Producer Responsibility (EPR) systems. The Directive also noted that certain plastics have a significant negative environmental health and economic impact with the Directive describing the European Strategy for Plastics as a step towards “establishing a circular economy in which the design and production of plastics and plastic products fully respect reuse, repair and recycling needs in which more sustainable materials are developed and promoted”. The Directive promotes circular approaches that give priority to “sustainable and non-toxic reusable products and reuse systems rather than to single-use products, aiming first and foremost to reduce the quantity of waste generated”. To help enable prioritisation to be given to reusable products, the Directive notes Member States to take

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<sup>790</sup> The European Parliament included the United Kingdom, however the United Kingdom is now no longer part of the European Union

<sup>791</sup> Directive (EU) 2019/904 of the European Parliament and of the Council of 5 June 2019 on the reduction of the impact of certain plastic products on the environment

<sup>792</sup> Single-use plastic items are products made wholly or partially from plastic, and which are primarily conceived to be used only once (or a few times) before they are thrown away. The definition also includes single-use paper items with plastic lining, such as cups and plates made of paper but with a plastic layer (also called plastic-coated paper).



necessary measures to achieve an ambitious and sustained reduction in the consumption of single-use plastic products, to achieve a measurable quantitative reduction in the consumption of these products. These measures may include:

- Ensuring that reusable alternatives to single-use plastic products are made available at the point of sale to the consumer;
- Recycled content in plastic container targets; and
- Economic instruments such as those ensuring that single-use products are not provided free of charge at the point of sale to the consumer.

There are also several measures that the Directive sets out for Member States to influence product design, collection, Extended Producer Responsibility systems and awareness raising of single-use beverage bottles up to a capacity of 3L requiring the following:

**Product design:**

- From 2025, beverage bottles<sup>793</sup> manufactured from Polyethylene terephthalate (PET) as the major component contain at least 25% recycled plastic;
- From 2030, beverage bottles<sup>794</sup> contain at least 30% recycled plastic; and
- By 2024 ensure that beverage bottles have caps and lids attached<sup>795</sup>.

**Collection:**

- Achieve a 77% collection target by 2025 and a 90% collection target by 2029.

To achieve these targets and as noted by the Directive, the establishment of deposit refund schemes (i.e., container deposit scheme) and the establishment of collection targets for relevant Extended Producer Responsibility systems should be implemented amongst other mechanisms.

**Extended Producer Responsibility Systems:**

- Ensure producers cover the costs of waste collection, transport and treatment, litter clean-up and awareness raising measures.

**Awareness Raising:**

- Inform consumers about the availability of reusable alternatives and systems, waste management options, best practices and the impact of littering.

While, this section has not provided an exhaustive assessment of the European Union ‘Single-Use Plastics Directive’, it is clear that the European Union, in establishing the above-mentioned targets, aims to bring about a shift in consumer behaviour and to help achieve a move towards “establishing a circular economy in which the design and production of plastics and plastic products fully respect reuse, repair and recycling needs in which more sustainable materials are developed and promoted”.

### 12.1.4 Extended Producer Responsibility System Design Considerations to Enable Reusables

As discussed in Section 12.1.3.1 above, to help enable prioritisation to be given to reusable products, the Directive notes Member States to take necessary measures to achieve an ambitious and sustained

<sup>793</sup> Directive (EU) 2019/904 Part F of the Annex

<sup>794</sup> Directive (EU) 2019/904 Part F of the Annex

<sup>795</sup> The Directive notes that caps and lids made of plastic which are used for containers are among the single-use plastic items that are found the most on beaches in the Union. Therefore, beverage containers that are single-use plastic products should only be allowed to be placed on the market if they fulfil specific product design requirements that significantly reduce the dispersal into the environment of beverage container caps and lids made of plastic.

reduction in the consumption of single-use plastic products, to achieve a measurable quantitative reduction in the consumption of these products. To help achieve this, there are several conditions which are recommended for the establishment of effective reuse (e.g., refillables) schemes, including:

- Container design – containers that have durability enhanced by universal container designs that enable acceptance of containers across different reuse schemes (e.g., standardised bottle design);
- Hygiene requirements – appropriate washing facilities as well as transportation and storage;
- Convenience and accessibility – engagement with consumers to highlight the scheme and the use of reusables as alternatives/substitutes for single-use packaging; and
- Scheme infrastructure and scale of scheme – appropriately located drop-off facilities, collection logistics, washing infrastructure, redistribution, customer refunds where appropriate, store marketing, employee training.

However, to support and facilitate the development of reuse schemes and to provide consumers with a conscious choice between single-use plastic packaging and more sustainable options, government policy is needed to support this process<sup>796</sup>. The broad enabling policy drivers have been discussed in Section 12.1.2 with the following list providing a high-level overview of the specific policy drivers to enable development of reusable packaging. The following list also has relevance to the development of reusables in Aotearoa New Zealand alongside the establishment of a NZ CRS design to support Aotearoa New Zealand's transition to *ōhanga āmiomio* - circular economy.

- Include targets on the share of refillable beverage packaging placed on the market;
- Place a tax on single-use plastics (NOTE: the same principle could equally apply to all types of packaging material) such as an 'Eco-Fee' to incentivise producers to seek alternative materials;
- Inclusion of all material types including glass within the NZ CRS recognising that glass is a key material in the production of refillable containers;
- Consumer to have visibility on the cost of single-use packaging (e.g., eligible scheme containers) through, for example, payment in store (e.g., visible on shopping receipt) and/or visibility of scheme costs published on the container return scheme website;
- Container return schemes to include a broad range of items and mandate reusable items in the scheme;
- Introduce incentives and provide financial support for reusable items and systems to overcome barriers to establishing the scheme (e.g., for the establishment of washing facility infrastructure);
- Modulation of fees on materials that are difficult to recycle versus those that have established recycling pathways and/or are reusable; and
- Support procurement processes to include reusable targets.

Regarding the NZ CRS, a key objective of the agency responsible for the operation and performance of the scheme (i.e., Managing Agency) is to promote the uptake of refillables and where possible encourage new opportunities for refilling. To help achieve this, the Managing Agency will be required to promote and develop the refillables market. Options to achieve this may include, but not be limited to:

- Investment in, or funding of, infrastructure by addressing barriers such as the return, re-washing and refilling of bottles.
- Working together with beverage companies to enable the method of return by customers is convenient and accessible.

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<sup>796</sup> Miller, S., Bolger, M. and Copello, L. 2019. Reusable solutions: how governments can help stop single-use plastic pollution. 3Keel, Oxford, United Kingdom. A study by the Rethink Plastic alliance and the Break Free From Plastic movement.

- Working together with beverage companies to promote refillables including awareness and education.
- Working with beverage companies to promote both a universal and bespoke refillable bottle. Universal bottle here refers to a generic bottle that could be used by multiple beverage companies but each with their own unique label.
- Establishment of NZ CRS container return facilities that can accept, sort and store for transportation both eligible single-use beverage containers and reusable beverage containers.
- Support and facilitate the uptake of reusables through the integration of strategic directives embedded within the NZ CRS scheme performance indicators.

This is in alignment with the three (3) key project outcomes as discussed in Section 1 and noted below:

- Change the way New Zealand values beverage containers that will see increased hangarua - recycling and new opportunities for refilling;
- Reduce the volume of plastics and other container litter currently ending up in our streams (i.e., awa – waterways), moana - marine environment, wāhi tūmatanui - public spaces and ruapara - landfills; and
- Give effect to ōhanga āmiomio - circular economy outcomes and any future priority product guidelines.

The following section provides a case study example of how the Oregon container return scheme was expanded to include additional kaitiakitanga whakanaonga - product stewardship efforts through the inclusion of a refillable bottle programme for Oregon’s craft brewery industry.

#### 12.1.4.1 Oregon Container Return Scheme and Refillable Case Study

The Oregon container return scheme was introduced in 1971 to address the growing litter problem along Oregon’s beaches, highways and other public areas. As reported by the Oregon State Government, the scheme has undergone several changes and updates over its approximate 40-year history, including the increase of the original USD5-cent deposit to an updated USD10-cent deposit in 2017. In 2017, the Oregon Beverage Recycling Cooperative (operator of the Oregon container return scheme – collects and processes all of the glass, aluminium and plastic beverage containers across Oregon) announced that it would pursue refillables in partnership with local breweries alongside the container return scheme with implementation of the refillable scheme occurring over a 2-year period<sup>797</sup>.

Additionally, Oregon has a Strategy for Greenhouse Gas (GHG) Reductions with a goal to reduce GHG by 75% below 1990 levels by 2050<sup>798</sup> with one strategy to achieve this being to decrease the use of materials, particularly those with higher greenhouse gas emissions over their life-cycles”. As reported by the Oregon Beverage Recycling Cooperative, “refillable glass bottles present an opportunity for waste reduction, with an average of 15 trips per bottle, it cannot be ruled out that interest in, and the political support for, refillables might one day exist from stakeholders throughout the beverage supply chain”. However, Oregon Beverage Recycling Cooperative noted that the number of trips a refillable bottle can make varies from approximately 15 trips up to 50 trips and is dependent on several factors including:

- The product contained in the bottle (e.g., carbonated or non-carbonated beverage);
- Handling of the bottles and physical tolerance levels for nicks and scuffs on the bottles; and
- Consumer tolerance for the appearance of wear and tear on the bottles (i.e., the tolerance for visible nicks and scuffs).

Further, the Oregon Beverage Recycling Cooperative reported that the water required to wash refillable bottles in modern bottle washing facilities averaged between 47% to 82% less than what is needed to

<sup>797</sup> <https://www.reloopplatform.org/deposit-return-motivates-voluntary-switch-to-refillables/>

<sup>798</sup> Climate Change and Greenhouse Gas Reduction in Oregon, 2014

manufacture new single-use bottles. Other benefits as reported in support of a refillable scheme for craft beer included:

- Reduced water pollution when using refillable bottles - it was noted that using refillable glass containers significantly reduced the amount of water pollution compared to the extraction of virgin materials for the manufacture of single-use glass bottles;
- The reuse of refillable glass bottles multiple time versus the production of new single-use glass bottles which are not manufactured of 100% recycled glass – it was reported that while Owens-Illinois (O-I) were committed to using recycled glass in bottles, it was not yet possible to manufacture a new single-use bottle made from 100% recycled glass. Typically, between 30% to 40% recycled content is used in the production of new single-use glass bottles in Oregon; and
- Reduced energy consumption – reuse has low energy requirements compared to the manufacture of new single-use glass bottles as well as the amount of energy needed to recycle glass cullet (e.g., a refillable 12-ounce bottle that has made 25 trips in its life time was reported to consume 93% less energy than a one-way single-use glass bottle).

Along with the above listed reported benefits, the Oregon Beverage Recycling Cooperative acknowledge that refillable glass bottles cost more than single-use one-way glass bottles because of their design and thickness of the bottle. The Cooperative also noted that despite the cost per bottle, the cost of refilling bottles would decrease with the number of trips the bottle makes.

The inclusion of refillable glass containers for the Oregon craft brewing industry was an intention to expand additional kaitiakitanga whakanaonga - product stewardship efforts through the inclusion of a refillable bottle programme for Oregon's craft brewery industry. However, the Oregon Beverage Recycling Cooperative acknowledged that there are a range of challenges to launching a refillable bottles programme and noted that a study carried out in 2009<sup>799</sup> exploring these matters highlighted several examples:

1. The rise of grocery store-based Reverse Vending Machines (RVMs – see Section 4 for further information on RVMs) as a collection method has been a factor hampering refillable bottle programmes. It was reported that the installed RVMs crushed the bottles for more efficient storage and transport, therefore making them impossible to refill<sup>800</sup>.
2. Many craft brewers sell products in uniquely moulded bottles and the breweries have invested significant time and resources into developing these unique bottles.
3. Lack of partner networks and necessary refillable infrastructure.

Taking the reported challenges on board, the 2009 investigation also highlighted several opportunities for including refillables alongside the container return scheme, including the creation of a network of depots that can accommodate the manual handling of refillable glass containers thereby creating the collection infrastructure to support the reverse logistics process for refillables. It is through the collection depots that the Oregon Beverage Recycling Cooperative expects recovery of refillable glass bottles to be made possible.

As reported by Oregon Beverage Recycling Cooperative<sup>801</sup>, 12 breweries, cider makers and wineries within Oregon were using the refillable bottles (The Ale Apothecary, Bayern, Buoy Beer, Cider Riot Wild & Free, Coopers Hall Winery and Taproom, Double Mountain Brewery and Taproom, Gigantic Brewing Company, Pierce, Rev Nat's Hard Cider, Wild Ride Brew, Wild River and Worthy) with reports that cider

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<sup>799</sup> Uncapping the potential of glass packaging: Opportunities and obstacles to creating a refillable glass bottle system for Oregon breweries, 2009. Research project was funded by the Oregon Recycling Markets Development Corp. which is a state-created non-profit company with a goal to expand markets for materials recovered in Oregon.

<sup>800</sup> <https://p2infohouse.org/ref/11/10427.htm>

<sup>801</sup> <https://www.bottledropcenters.com/buy-refillable-containers/>

makers and wineries were showing interest in using refillable bottles that may come in different colours. Further, due to the state boundaries, breweries are reported to only be able to distribute 20% of the refillable beer bottles to out-of-state locations to minimise the loss of refillable bottles.

While the Oregon Beverage Recycling Cooperative combined single-use container return scheme and the refillable bottle system has only just begun, it has been reported that 407,840 bottles have been saved from being crushed and recycled in 2019 with 54 beer, cider and wine choices now available in the refillable bottles<sup>802</sup>. The Oregon refillable bottles are reported to be made from Oregon recycled glass and are exclusive to the State with bottles being washed and refilled up to 25 times. As with the Oregon container return scheme, consumers purchase a refillable bottle and pay the same USD10-cent deposit as for single-use containers. When the consumer returns the refillable bottle to a BottleDrop facility (BottleDrop depot (equivalent to a manual collection depot), Green Bag [similar to the Australian Bag Drop facility] and return to a local retailer [via Reverse Vending Machines]), the consumer receives the USD10-cent refund. Once collected, the refillables are sorted, washed, inspected and delivered back to Oregon's craft beverage producers. Additionally, the Oregon Beverage Recycling Cooperative as part of the refillable system has implemented a 'BottleBox Program' which consists of a reusable waxed cardboard crate that can hold up to 24 BottleDrop refillable bottles. The BottleBox Program simply involves consumers picking up a BottleBox crate from a collection depot and paying USD\$3 deposit which is charged to the consumers BottleDrop account. Once the consumer has filled the crate with 24 bottles, they can either:

- Drop the crate to a collection depot and receive credit for the bottles plus 20%;
- Swap the crate for another; and
- Return the crate and receive the USD\$3 deposit back.

Therefore, consumers are incentivised to return the BottleBox by receiving an additional 20% back as a reward for bringing the BottleBox back in good shape.

In order for the Oregon container return scheme and refillable system to operate effectively, Oregon state law and rules require retailers who sell beverages to accept empty containers from consumers for a refund. Once the consumer returns the empty eligible containers, the Oregon Beverage Recycling Cooperative collects the containers using their own fleet of vehicles and reconciles deposits on behalf of the distributors. To do this, the vehicle driver is reported to have to record the container count and then pay the outstanding deposit amount. The containers are then transported to one (1) of eight (8) processing facilities across Oregon where they are sorted and counted using conveyor processing lines. As discussed above, the refillable bottles once collected, are sorted, washed, inspected and delivered back to Oregon's craft beverage producers.

Of note, while aluminium containers are crushed, baled and transported to recycling smelters and glass sent to a glass recycler, the Oregon Beverage Recycling Cooperative perforates, crush, bales and transports plastic PET bottles to ORPET<sup>803</sup>, Oregon's first PET recycling facility<sup>804</sup>. The Oregon Beverage Recycling Cooperative reports that the partnership arrangement with ORPET decreases resource expenditure by keeping plastic materials in northwest Oregon, keeps 13million pounds of plastic out of landfills per year and provides local manufacturers with recycled product (e.g., clean flake for the manufacture of strapping, clam shells or to bottle-to-bottle facilities)<sup>805</sup>.

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<sup>802</sup> <https://www.bottledropcenters.com/buy-refillable-containers/>

<sup>803</sup> <https://www.orpet.net/>

<sup>804</sup> The facility converts post-consumer PET bottles collected through Oregon's container return scheme into raw material for manufacturing, packaging and construction: <https://www.orpet.net/orpet-on-target-for-july-startup/>

<sup>805</sup> <https://www.obrc.com/About/WhatWeDo>

### 12.1.4.2 Canadian Container Return Schemes and Refillables Case Study

Canada offers one of the largest beer bottle refillable systems with the system predominantly influenced by the two (2) major breweries (i.e., Molson and Labatt). While the method of refillable bottle collection varies between provinces some use return-to-retail and others use collection depots (e.g., container return facilities). It is worth briefly noting at this point that in the 1990s Molson and Labatt agreed to move to using a standard long-neck bottle as the cost of sorting and transporting the variety of different types of bottles added significant costs to the refillable system. Because of this move to a standardised bottle, the Canadian Brewers Association assisted in establishing a standard bottle agreement that enabled smaller breweries to participate in the nationwide refillable bottle programme. As reported in 2009<sup>806</sup>, approximately 40 Canadian brewers used the same standard long-neck refillable beer bottle which is manufactured by Owens-Illinois in Canada and which make on average between 15 to 20 trips in the bottle's lifetime.

#### Nova Scotia

As reported in earlier sections, Nova Scotia implemented a beverage container return scheme in 1996 with consumers paying a CAD10-cent deposit on alcoholic and non-alcoholic containers under 500mL. Non-alcoholic beverage containers up to 5L also have a CAD10-cent deposit, with alcoholic beverage containers over 500mL having a CAD20-cent deposit. In comparison, a dozen refillable bottles in Nova Scotia has a CAD\$1.20 deposit (Table 26).

Of note, the Nova Scotia beverage container return scheme includes both single-use and refillable containers, however the scheme operates the deposit under a "half-back system" with consumers refunded half or a portion of the deposit paid on eligible single-use containers and the other half retained to support recycling initiatives (half-back systems in Canada are discussed further in Section 12.4.1). When a consumer returns the refillable industry standard bottle (ISB) they receive the full CAD10-cent per bottle. In comparison, the consumer only receives CAD5-cents back on the single-use beverage containers under the half-back system.

**Table 26: Nova Scotia half-back container return scheme deposit refund amount**

Container Type	Deposit Paid (CAD\$)	Refund (CAD\$)
Non-liquor less than 5L	10-cents	5-cents
Liquor 500mL or less	10-cents	5-cents
Liquor greater than 500mL	20-cents	10-cents
Deposits on refillable domestic beer bottles are completely refundable: CAD\$1.20 per dozen		

At the Nova Scotia container collection depots, both single-use and refillable containers are collected and segregated with depots having separate contracts with individual breweries to coordinate the return of refillable beer bottles. According to the Nova Scotia Bottle Bill Resource Guide, the return rate for single-use bottles was 81% with refillable beer bottles having a return rate of 97%; an overall beverage container return scheme return rate of approximately 81%<sup>807</sup>. It is also worth noting that while

<sup>806</sup> Uncapping the potential of glass packaging: Opportunities and obstacles to creating a refillable glass bottle system for Oregon breweries, 2009. Research project was funded by the Oregon Recycling Markets Development Corp. which is a state-created non-profit company with a goal to expand markets for materials recovered in Oregon.

<sup>807</sup> <http://www.bottlebill.org/index.php/current-and-proposed-laws/canada/nova-scotia>

Nova Scotia has a population of 976,768<sup>808</sup>, 100% of the population has access to a multi-material kerbside recycling system and access to container collection depots<sup>809</sup>.

Additionally, some container collection depots in Nova Scotia also act as collection points for other materials such as paint and scrap metal along with single-use and refillable containers that are part of the beverage container return scheme<sup>810</sup>.

## 12.2 Scheme Deposit plus Economic Incentives

Across the Extended Producer Responsibility (EPR) schemes, there are several economic and market-based incentives which can be implemented either individually or in combination to incentivise producers to take financial and physical (e.g., collection) responsibility for the end-of-life management of their products and packaging. For example, the inclusion of a material tax (see Section 12.1.2 for further information) in an EPR system (which may include a container return scheme) should be associated with strict conditions to ensure that the money paid by producers is used for the treatment of the products subject to the tax. In the case of the NZ CRS, the application of the Advanced Material Recycling Fee (AMRF) recognises that not all container packaging materials are equal with some more recyclable and valuable than others. In practice this means that materials that are difficult to recycle or problematic such as liquid paperboard may need to incur additional cost to see them successfully recycled in keeping with the outcomes of the NZ CRS design while other materials may receive a net income such as aluminium. Approaching this in an open and transparent way will ensure container material choices by beverage producers are recognised and reflects any net cost or revenue that is expected to ultimately be passed on to the customer. Also, in keeping with the outcomes of the NZ CRS design, the non-financial impacts associated with container material choice must be factored in or at the very least provided for to help shape the direction and choice of container material in the future. The AMRF provides the mechanism to achieve this (refer to Section 11 for further discussion).

As discussed in Section 12.1.2, the four (4) main economic and market-based producer incentives include<sup>811</sup>:

- Deposit refund – a deposit paid by the consumer at the time of purchase which is refunded when the item is returned (i.e., the New Zealand Container Return Scheme);
- Advanced Disposal Fees (ADF) – fees levied on certain products based on the estimated costs of collection and treatment with fees used to finance post-consumer treatment of specified products;
- Material taxes – taxing specific materials (or materials that are difficult to recycle, contain environmentally harmful elements) to incentivise the use of other material including recycled or less environmentally harmful material. The OECD recommends the tax be allocated for the collection, sorting and treatment of post-consumer products. The implementation of material taxes is generally where a scheme is seeking to reduce the source of specific materials, including virgin material and/or environmentally harmful materials; and

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<sup>808</sup> [https://www.novascotia.ca/finance/statistics/archive\\_news.asp?id=15412&dg=&df=&dto=0&dti=12](https://www.novascotia.ca/finance/statistics/archive_news.asp?id=15412&dg=&df=&dto=0&dti=12)

<sup>809</sup> Uncapping the potential of glass packaging: Opportunities and obstacles to creating a refillable glass bottle system for Oregon breweries, 2009. Research project was funded by the Oregon Recycling Markets Development Corp. which is a state-created non-profit company with a goal to expand markets for materials recovered in Oregon.

<sup>810</sup> Uncapping the potential of glass packaging: Opportunities and obstacles to creating a refillable glass bottle system for Oregon breweries, 2009. Research project was funded by the Oregon Recycling Markets Development Corp. which is a state-created non-profit company with a goal to expand markets for materials recovered in Oregon.

<sup>811</sup> Best Practice International Packaging Approaches, 2011, Martin Stewardship and Management Strategies Pty Ltd

- Upstream combination tax/subsidy – a tax paid by producers to subsidise waste treatment, by providing producers with incentives to alter their material inputs and product design whilst providing a financing mechanism to support recycling and treatment.

Further, as discussed in Section 12.1, the European Union as an example, has established a tax on single-use plastics to incentivise producers to seek alternative materials, including the use of reusable and/or refillables.

In the case of the above mentioned ‘Advanced Disposal Fee’, the NZ CRS provides for an equivalent fee in the form of an Advanced Material Recycling Fee (AMRF) applied where a container is difficult to recycle or made of a material that is problematic to recycle (refer Section 11.9 for further information). The intent of the AMRF is to encourage producers to improve the environmental design including material considerations of their products thereby supporting a key measure of EPR systems being ‘producer responsibility implemented at the level of individual producers to incentivise eco-design of products’ (see Section 12.3).

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*Incentives for improving the design of products and packaging (e.g., eco-design) is supported by internalisation of end-of-life costs and strict enforcement.*

*Fees should be set at a level where they recover the full cost of product end-of-life management.*

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The following Norwegian case study was presented in Section 11 and is reintroduced here given its discussion and explanation of the financial incentives included within the container return scheme. Similarly, the Canadian case study is reintroduced below and builds on information provided previously.

### 12.2.1 Norwegian Case Study

As reported in Section 11, to encourage the Norwegian Scheme Coordinator, Infinitum, a financial incentive operates alongside the scheme to ensure high return rates of eligible scheme containers. Norwegian legislation includes an environmental tax on non-refillable (i.e., single-use) containers which is taxed at a variable rate by the government and payable by the beverage supplier to cover the cost of recycling the packaging. The environmental tax is adjusted based on the rate of containers returned, where if the return rate is greater than 25% the environmental tax is reduced on a sliding scale to a zero rate if the return rate reaches 95%<sup>812</sup>. Consequently, the application of the environmental tax can be viewed as a reward system for beverage manufacturers whereby the higher the return rate for eligible materials the lower the tax on the beverage. Under the Norwegian scheme, recyclable bottles and cans are subject to two (2) different taxes:

- Basic tax
  - The basic tax is set at NOK1.23 (approximately NZD\$0.20) per bottle or can and is consistent irrespective of the return rate.
- Environmental tax
  - The environmental tax is set at NOK5.99 (approximately NZD\$0.986) for cans and NOK2.62 (approximately NZD\$0.43) for recyclable bottles. As discussed above the environmental tax is linked to the return rate starting at 25% and decreasing to zero at a 95% return rate. The basic tax continues to be charged even if the return rate is greater than or equal to 95%.

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*Across the EPR schemes, there are economic and market-based incentives which can be implemented either individually or in combination to incentivise producers to take financial and physical (e.g., collection) responsibility for the end-of-life management of their products and packaging*

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<sup>812</sup> Evaluation of the Operation of the Northern Territory Container Deposit Scheme, 2018



Under the Norwegian container deposit scheme, the deposit applied to eligible containers motivates consumers to return the packaging and receive the appropriate refund, however it is the above levies (i.e., basic tax and environmental tax) that motivate the industry to ensure efficient collection systems are put in place (i.e., installation of reverse vending machines) to collect the returned empties. Alongside this is the Norwegian Government's initiative to encourage the circular use of these recycled materials in the production of new containers.

## 12.2.2 Canadian Case Study

Across the global container return schemes, it is generally the beverage producer that initially fronts the cost of the scheme costs, however in Canada some schemes have been developed to specifically minimise the financial obligation of beverage producers and rather pass these costs on to the consumer<sup>813</sup>. As previously reported in Section 11, in Canadian schemes, the following range of fees are charged on a per container basis to consumers to fund the various collection systems:

- Container Recycling Fee
  - This fee depends on the value of the material being collected and the collection rate for a container (i.e., high collection rates lead to less unredeemed deposits therefore needing a higher container recycling fee. The fee is paid by beverage distributors and passed on to consumers. Lower collection rates lead to greater unredeemed deposits therefore needing a lower container recycling fee). The fees reported in British Columbia range from zero to CAD\$0.20 per container to zero to CAD\$1.10 per container in Alberta.
- Environmental handling charge
  - This fee is charged on all non-refillable beverage containers with funds collected by the provincial government in Saskatchewan to pay for the scheme. The fee is reported to range from CAD\$0.03 to CAD\$0.07 per container sold with funds primarily used to fund the scheme with excess put into provincial general revenues.
- The half-back system, recycling fund fee and container handling fee
  - These systems are used in a number of Canadian schemes including New Brunswick and Nova Scotia and are based on the principle that the consumer is refunded half or a portion of the deposit paid on eligible single-use containers and the other half retained to support recycling initiatives. As reported for the environmental handling charge, the fee is used to fund the scheme with excess funds used to subsidise the municipal kerbside recycling programme and other provincial environmental initiatives.

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*The role of a Managing Agency (including the Governance Board) in an EPR (and within the NZ CRS) is an important aspect as it is the entity responsible for the performance of the scheme.*

*Broadly, Managing Agencies can be not-for-profit (typically, e.g., Managing Agencies in British Columbia, Canada are legally obliged to have not-for-profit status), for-profit firms (occasionally) and government agencies (rarely).*

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*Extended Producer Responsibility systems influence and/or effect a change in product design and it is generally the producer that is best placed to undertake this requirement as it is the producer that has access to product expertise and product knowledge, knowledge of product supply chains and an understanding of other product materials to support eco-designs and/or sustainable packaging alternatives.*

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For example, and as discussed in Section 12.2.2 above, Nova Scotia operates the half-back system where once the consumer purchases an eligible scheme container, they pay a deposit which when returned, the consumer is paid the respective scheme refund amount (Table 27)<sup>814,815</sup>.

<sup>813</sup> Who Pays What: An analysis of beverage container collection and costs in Canada, 2012

<sup>814</sup> <https://novascotia.ca/nse/waste/beverage.container.deposit.refund.program.asp>

<sup>815</sup> <https://divertns.ca/recycling/what-goes-where/beverage-container-recycling>

**Table 27: Nova Scotia half-back container return scheme deposit refund amount**

Container Type	Deposit Paid (CAD\$)	Refund (CAD\$)
Non-liquor less than 5L	10-cents	5-cents
Liquor 500mL or less	10-cents	5-cents
Liquor greater than 500mL	20-cents	10-cents
Deposits on refillable domestic beer bottles are completely refundable: CAD\$1.20 per dozen		

The application of these fees varies depending on the specific Canadian scheme, but all the above fees suggest that the consumer is paying either a portion of, or the whole cost of operating the scheme.

### 12.3 Environmental Design through Scheme Incentivisation

As discussed in Section 12.2, one of the key guiding design elements for an Extended Producer Responsibility (EPR) system is to provide producers with incentives to incorporate changes upstream at the design phase in order to be more environmentally sound. It is acknowledged that the establishment of EPR systems requires consideration of all design elements, however this section will broadly discuss the EPR incentives to improve product design through measures such as increasing recycled material content of containers, using sustainable materials or the expansion of products to include reusables as an alternative choice for consumers.

Incentives for improving the design of products and packaging (e.g., eco-design) are supported by internalisation of end-of-life costs and strict enforcement. To enable this, the OECD recommends that fees should be set at a level where they recover the full cost of product end-of-life management. However, setting fees is one element of the overall design considerations as product design improvements are influenced by the producer. Where Extended Producer Responsibility (EPR) schemes influence and/or effect a change in product design, it is generally the producer that is best placed to undertake this requirement as it is the producer that has access to product expertise and product knowledge, knowledge of product supply chains and an understanding of other product materials to support eco-designs and/or sustainable packaging alternatives. Consequently, based on this knowledge, it is the producer who is best positioned to make any changes to their products to meet EPR system requirements and/or legislated requirements (e.g., European Union Single-Use Plastic Directive and specified recycled material content in beverage containers) and to accept responsibility for the treatment (e.g., recycling, reuse) of post-consumer packaged material.

As discussed throughout this section and in Section 11, the application of an Advanced Material Recycling Fee (AMRF) in the NZ CRS design will encourage producers to investigate options to design products with materials that are more sustainable and/or establish recycling markets for the materials.

### 12.4 Role and Legal Status of Managing Agencies within an Extended Producer Responsibility System

The governance of Extended Producer Responsibility (EPR) systems involve roles for government, producers and providers of collection and processing services. However, in many global Extended Producer Responsibility (EPR) systems, the entity established to implement and have responsibility for the EPR system requirements is commonly referred to as the Producer Responsibility Organisation (PRO). In the case of the NZ CRS design, the PRO is referred to as the Managing Agency. The term Managing Agency is used hereafter.

The role of a Managing Agency (including the Governance Board) in an EPR (and within the NZ CRS) is an important aspect as it is the entity responsible for the performance of the scheme. Broadly, Managing Agencies can be not-for-profit (typically, e.g., Managing Agencies in British Columbia, Canada are legally

obliged to have not-for-profit status), for-profit firms (occasionally) and government agencies (rarely). Each of these Managing Agency entities are discussed further in Section 14.

- Not-for-profit (also known as non-profit) Managing Agency.
- For-Profit Managing Agency.
- Government Managing Agency.

As not-for-profit Managing Agencies are the predominant legal status of a Managing Agency in EPR systems, no further discussion will be provided here on the remaining two (2) options.

Two (2) case studies examples of not-for-profit organisations are provided in the following sections to highlight how the structure, function and operations influence the schemes interaction with Extended Producer Responsibility (EPR) principles.

### 12.4.1 Agrecovery Case Study

Agrecovery is Aotearoa New Zealand's not-for-profit charitable trust (Agrecovery Foundation) set up in 2006 by the primary industry to provide a sustainable solution for 'on farm' agrichemicals and their packaging. The organisation is made up of trustees (representatives of key primary sector industries, including Agcarm, DairyNZ, Federated Farmers, Horticulture New Zealand, Rural Contractors New Zealand and Waikato Regional Council representing local government) who are accountable for the strategic direction of Agrecovery. Additionally, it is reported that the Agrecovery Foundation also manages day-to-day operations<sup>816</sup>.

Agrecovery is a voluntary kaitiakitanga whakanaonga - product stewardship scheme (accredited under the Waste Minimisation Act 2008) providing a solution to farmers and growers and other users for the safe disposal of unwanted agrichemicals, the recycling of old empty farm containers including drums<sup>817</sup>. Agrecovery works with the brand owners that distribute these packaging types including animal health and dairy hygiene products to ensure the brands take responsibility for the disposal of these products and packaging at the end of their useful life.

To ensure the safe disposal of these products, the brand owners are reported to pay Agrecovery fees and levies to cover programme costs, which in turn provides free access to programme users. Information was not available at the time of writing to provide clarity on these fees or levies; however this has also been the case for many other voluntary schemes (e.g., New Zealand Glass Packaging Forum). As reported by Agrecovery, the scheme has recycled 2,397,096kg of containers since 2007, 109,509kg of chemicals recovered since 2009 and 593,778kg of containers recycled in the 2018/19 financial year<sup>818</sup>. Also, of note, the Agrecovery annual report<sup>819</sup> shows an annual increase in collection volumes from 94 sites across rural New Zealand over a 5-year period from 2014/15 to 2018/19 with the following figures reported:

- 2014/15 – 236,496kg
- 2015/16 – 256,052kg
- 2016/17 – 300,000kg
- 2017/18 – 306,000kg
- 2018/19 – 436,870kg

While it is not the intent of this section to provide a detailed review of the Agrecovery programme, it is worth noting that of the 110 tonnes of unwanted or obsolete chemicals and 2,437 tonnes of plastic

<sup>816</sup> <https://www.agrecovery.co.nz/foundation/agrecovery-foundation/>

<sup>817</sup> <https://www.agrecovery.co.nz/>

<sup>818</sup> <https://www.agrecovery.co.nz/foundation/agrecovery-foundation/>

<sup>819</sup> Agrecovery Annual Report 2018/19

collected since the programme's inception<sup>820</sup>, it is clear that the Agrecovery voluntary kaitiakitanga whakanaonga - product stewardship programme is helping to reduce the amount of rural farm waste in Aotearoa New Zealand. It is also worth noting that the Manatū Mō Te Taiao - Ministry for the Environment through the priority products and kaitiakitanga whakanaonga - product stewardship guidelines have listed farm plastics and agrichemicals and their containers as two (2) of the six (6) priority products<sup>821</sup>. These products have in July 2020 been declared priority products, which will require a mandatory approach requiring producers of these products to take responsibility for their end of life and ensure costs of proper waste management are paid by producers and consumers, not communities and the environment.

#### 12.4.2 Return-It: British Columbia Case Study

Many Canadian provinces, as required by legislation, have established non-profit organisations to manage the range of beverage container return schemes. In British Columbia, the beverage container return scheme is managed by the federally incorporated not-for-profit product stewardship organisation, Encorp Pacific (Canada). The overarching mandate of Encorp is 'to develop, manage and improve systems to recover used packaging and end-of-life products from consumers and to ensure that they are properly recycled and not landfilled or incinerated', therefore Encorp is considered an Extended Producer Responsibility (EPR) organisation. In addition to managing the provinces beverage container return scheme, Encorp also manages recycling of acceptable scheme electronic waste, recycling of large appliances and the collection and recycling of textiles<sup>822</sup>.

To provide the services to the wider community, Encorp is reported to operate under the key guiding principles to ensure the scheme meets the schemes mandate:

- Consumer friendly system;
- Cost effective management to ensure it has the lowest impact on consumer shelf prices;
- No cross subsidisation of container types – each container type pays for its own costs;
- Divert resources from landfill and incineration;
- Find useable end-products that maximise the value of the recovered commodities; and
- Treat brand owners equitably.

With regards to the management of Encorp, the Board of Directors comprises representatives from the beverage and retail grocery industries as well as directors who have no connection to either industry group. Further, Encorp has also established an Advisory Committee as part of Encorp's governance which ensures that stakeholders including local governments, environmental groups and small brand owners can actively contribute to the scheme<sup>823</sup>. Further, Encorp is reported to follow the governance model based on the guidelines for Toronto Stock Exchange (TSX) publicly listed companies in Canada<sup>824,825</sup>. A key factor of the British Columbia beverage container return scheme is that as a not-for-profit organisation, Encorp does not pay dividends to the company's owners but instead drives an efficient financial model with financial reserves used to fund the operations of the company when market conditions require. For example, the Encorp 2018 publicly available Annual Report<sup>826</sup>, provides a summary of deposits, refunds, revenues and expenses support by detailed financial statements to provide transparent reporting on scheme finances. In 2018, Encorp reported the following figures:

<sup>820</sup> Agrecovery Annual Report 2018/19

<sup>821</sup> <https://www.mfe.govt.nz/publications/waste/proposed-priority-products-and-priority-product-stewardship-scheme-guidelines>

<sup>822</sup> <https://www.return-it.ca/>

<sup>823</sup> <https://www.return-it.ca/about/who-we-are/>

<sup>824</sup> <https://www.return-it.ca/about/who-we-are/>

<sup>825</sup> TSX Corporate governance: A guide to good disclosure:

<sup>826</sup> Return-It 2018 Annual Report 2018, Encorp Pacific (Canada)

- Deposits collected: CAD\$90,379,585
- Refunds issued: CAD\$72,181,564
- Total revenue: CAD\$94,617,619
- Total expenses: CAD\$94,110,805

Additionally, to provide further transparency of the quantity of containers that passed through the scheme, Encorp reported the following figures for 2018:

- Total sales in units: 1,350,852,403
- Total product collected in units: 1,045,466,471
- Recovery rate: 77.4% compared to 75.8% in 2017 (NOTE: the regulated recovery rate requirement is 75%)
- Provincial per capita recovery: 209.4 units (with regional breakdowns provided in the annual reports)

As an organisation, Encorp now manages approximately 300 brand owners who are part of the British Columbia beverage container return scheme. When the scheme was first setup in 1994 Encorp managed a limited number of brand owners and types of beverage containers, however in 1998 the Provincial Government expanded the deposit regulation from carbonated drinks (packaged in aluminium, bi-metal, glass and plastic) only to include water, juice and alcohol (including most wine, spirits and beer bottles) in product types such as bag-in-a-box and pouches. It is clear that despite Encorp's original beginnings to provide a container return scheme for a limited number of brand owners and beverage container types, the expansion of the regulations did not appear to hinder Encorp's ability to provide a continued and consistent service to British Columbia residents as well as meeting the mission and objectives of the beverage container return scheme<sup>827</sup>

The not-for-profit structure of Encorp means the organisation follows public accountability and transparency requirements which is combined with industry knowledge of operational efficiencies. Transparency is a key element in providing the public with information on scheme objectives, operation of the scheme, scheme financials and performance (financials are independently audited) as well as consumer awareness and educational programmes, details which are publicly reported via Encorp's Annual Reports. Of note, Encorp is reported to pay CAD\$1,500,000 to an annual consumer awareness programme for public awareness campaigns to ensure the public remain engaged in and understand the scheme requirements<sup>828</sup>.

Further, as Encorp is a not-for-profit organisation, it does not receive any funding from the government and instead generates revenues through the collection of unredeemed deposits, the sale of collected materials and container recycling fees. Briefly, the container recycling fee has been in place in the British Columbia beverage container return scheme for more than 18-years and was established by Encorp to ensure that the recycling system was operating efficiently to enable the scheme to increase the number of containers collected and consequently decrease and prevent the number of containers going to landfill or being incinerated in British Columbia. Additionally, Encorp reported that as a not-for-profit organisation, the establishment of the container recycling fee offsets the cost of recycling containers as the commodity value and unredeemed deposits may only cover some of the recycling costs with the container recycling fee covering the rest. The container recycling fee (as at April 2013, the Goods and Services Tax (GST) of 5% is applied to the container recycling fee) is a non-refundable variable fee (i.e., depending on the beverage container category, economic climate and the value of commodity sales) charged at the time of purchase (i.e., providing the consumer visibility of the direct cost of recycling the item) by Encorp that covers the net cost of recycling the container. Table 28 below summarises the container recycling fees charged to consumers in 2020.

<sup>827</sup> <https://www.return-it.ca/about/who-we-are/>

<sup>828</sup> <https://www.return-it.ca/about/who-we-are/>

**Table 28: British Columbia 2020 container recycling fees by material category**

Container	Size	Deposit Value (CAD\$)	Container Recycling Fee (CAD\$)
Aluminium	0 – 1L	10-cents	No Recycling Fee
Plastic	0 – 1L	10-cents	3-cents
	> 1L	20-cents	5-cents
Glass	0 – 1L	10-cents	7-cents
	> 1L	20-cents	18-cents
Bi-metal	0 – 1L	10-cents	3-cents
	> 1L	20-cents	No Recycling Fee
Drink Box	0 – 500mL	10-cents	No Recycling Fee
	501mL – 1L	10-cents	5-cents
Gable Top	0 - 1L	10-cents	No Recycling Fee
	> 1L	20-cents	4-cents
Bag in Box	> 1L	20-cents	7-cents

Of note, Encorp reports that retailers have the option of including the container recycling fee in the price of beverages or charging the fee as a separate item that the consumer can see on their receipt<sup>829</sup>. The scheme only charges the net cost for recovering and recycling beverage containers after any unredeemed deposits and commodity revenues for that specific container type have been used with container recycling fees reviewed annually to determine if costs need to increase or decrease reflecting the current economic climate as well as commodity prices and beverage container volumes passing through the scheme<sup>830</sup>.

The money collected from the container recycling fees, plus the value from the sale of materials and any money left over from the unredeemed deposit is used to pay for the collection, handling, transportation and processing of the scheme containers<sup>831</sup>. Further, Encorp scheme expenses include deposit refunds, handling fees, transportation and processing, awareness and education campaigns and administration costs. To trace the flow of scheme finances, all Return-It depots are independently owned and operated but are contracted to Encorp to provide collection services to consumers with Encorp paying the following fees to the respective scheme participants<sup>832</sup>:

- A container handling fee to depots and retail grocery stores for the collection of eligible containers;
- A transport fee to transportation companies for the transport of containers to the processing facility; and
- A processing fee to the container processors.

To ensure the principles of kaitiakitanga whakanaonga - product stewardship are upheld by Encorp for the beverage containers collected, Encorp is reported to recycle 100% of the material that flows through the beverage container return scheme with material processed into new products such as PET plastic pellets, aluminium re-processed into new cans, liquid paperboard pulped with fibre used to make paper, toilet paper, cardboard boxes and other paper products and glass re-processed into new bottles, insulation, sand blasting material and other glass products.

<sup>829</sup> <https://www.return-it.ca/beverage/faqs/crf/>

<sup>830</sup> <https://www.return-it.ca/beverage/industry/recyclingfee/>

<sup>831</sup> <https://www.return-it.ca/beverage/faqs/crf/>

<sup>832</sup> <https://www.return-it.ca/about/who-we-are/>

## 12.5 Levy Collected at Point of Sale

As discussed in Section 12.4, depending on the structure of the Extended Producer Responsibility system and any associated kaitiakitanga whakanaonga - product stewardship schemes, the consumer may be required to pay at the point of sale a deposit or fee for the cost of collection, recycling and processing the material. The benefit of this approach is the visibility of scheme costs to the consumer, visually expressing the cost of product end-of-life management and encouraging consumers to acknowledge their influence on product design and placement through consumer choice.

The below section provides an example of a voluntary kaitiakitanga whakanaonga - product stewardship scheme in Aotearoa New Zealand where a non-refundable levy is applied at the point of sale to cover the costs of recycling the product.

### 12.5.1 Resene Case Study

An example of Aotearoa New Zealand's voluntary take-back kaitiakitanga whakanaonga - product stewardship scheme is Resene 'Be PaintWise' established in 2004 enabling consumers to return unwanted paint packaging to designated Resene ColorShops as part of the Resene PaintWise programme<sup>833</sup>. The scheme is managed by a non-profit charitable trust (The Resene Foundation) and is responsible for managing the scheme and for distributing any surplus funds to charities or to use the funds to extend the Resene PaintWise service. Additionally, the intent of Resene initiating the 'Be PaintWise' scheme was to support the organisation's environmentally responsible values to minimise the impact the business has on the environment, including, product formulation, production of products and responsible recovery and disposal.

Broadly, the scheme operates by consumers paying a NZD15-cent per litre levy on retail Resene paint purchases (i.e., at the point of purchase) which enables the consumer to return the empty container or unused paint back to participating stores for recycling and/or reuse (e.g., plastic pails recycled into new pails, recycling of steel packaging and extraction of paint solvents for reuse). The consumer does not receive the levy back when returning Resene cans or paints but instead is made aware of the upfront levy on the purchase receipt. The scheme also accepts non-Resene cans and paints but with a fee applied to these products to cover management and disposal of these products. In addition, Resene provides financial assistance direct to the Resene Foundation to supplement the 15-cent per litre levy to support the financial operation of the scheme.

As reported by 3R (Resene PaintWise programme manager<sup>834</sup>) in 2015<sup>835</sup>, the Resene 'Be PaintWise' scheme collected over 706,000kgs of paint and packaging from Resene ColorShops and trade-partner locations throughout Aotearoa New Zealand, representing a 23% increase on 2014 figures. The increase was attributed to the building and renovation sector as well as an increased consumer awareness of the scheme.

## 12.6 The Aotearoa New Zealand Context

As global economies and populations grow, continued pressure is put on Papatūānuku and rawa taiao - natural resources to produce the wide range of products available on the market. As discussed earlier in this section, it is clear that continued population growth and demand for products and services will continue to place pressure on rawa taiao - environmental resources, and to limit this, it will require countries to implement policies that improve whakahaere rauemi - resource management and ensure sustainable materials management building on the principles of the pūnaha whakarōpū para - waste hierarchy of reduce, reuse and recycle. To enable this, countries have implemented Kaitiakitanga

<sup>833</sup> [https://www.resene.co.nz/comn/envissue/paintwise\\_development.htm](https://www.resene.co.nz/comn/envissue/paintwise_development.htm)

<sup>834</sup> <https://3r.co.nz/what-we-do/paintwise/>

<sup>835</sup> <https://3r.co.nz/enduring-success-recognised-recycling-scheme/>

Whakanaonga - Product Stewardship schemes, including for example, the establishment and implementation of container return schemes.

Further, there is no one Kaitiakitanga Whakanaonga - Product Stewardship scheme and associated governance structure that could be simply transposed into Aotearoa New Zealand to cover all material and product types. It is therefore important to evaluate each programme objectively, understand its drivers, and consider its potential applicability to Aotearoa New Zealand conditions. These drivers include, for example, the impact of a scheme on delivering positive economic, environmental, cultural and social outcomes and behaviour change. Consequently, the role of a scheme Managing Agency within the NZ CRS is an important aspect as it is the entity responsible for the operation and performance of the scheme.

It is important to note here that Aotearoa New Zealand has one of the highest rates of household waste production per capita in the OECD<sup>836</sup>. Many of the products used for every-day life are often designed with limited thought for the life cycle of the product meaning the majority of products currently produced and the behaviours by which consumers purchase and use these products is linear (take-make-dispose) in nature. Along with international drivers including the China National Sword and the COVID-19 global health pandemic impacts on the recycling markets, there is now growing awareness and acceptance that countries must look at reducing the impacts of manufactured products on our environment through a circular (make-use-return) economy. To help progress this transition, the New Zealand Government is encouraging producers, brand owners, importers, retailers and consumers to take greater responsibility to transition from a linear to a circular economy. This might include improved recovery potential of products, designing products that have greater recyclable content or ensuring there is a responsible means of recycling of a product.

The New Zealand Government recognises that continued progress is needed to transition from a linear economy to a circular economy with measures such a voluntary and regulated kaitiakitanga whakanaonga - product stewardship for priority products. The Waste Minimisation Act 2008 (WMA) has several functions to facilitate this transition, including<sup>837</sup>:

- Bans of specific products – New Zealand has recently enacted the WMA to ban two products to address the environmental harms of microplastics and marine plastics: banning the sale and manufacture of microbeads in certain wash-off products (as at 7 June 2018) and banning the sale of single-use plastic shopping bags (as at 1 July 2019).
- Implementing regulated kaitiakitanga whakanaonga - product stewardship.

However, to implement regulated kaitiakitanga whakanaonga - product stewardship in Aotearoa New Zealand, several other legislative framework documents as discussed previously in Section 2 and Section 13 (e.g., WMA, Local Government Act 2002) require consideration with specific components assessed for their application to the implementation of a NZ CRS.

Importantly, Aotearoa New Zealand currently has a voluntary approach to kaitiakitanga whakanaonga - product stewardship although the Waste Minimisation Act 2008 enables the government to declare priority products (i.e., General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020) meaning a mandatory kaitiakitanga whakanaonga - product stewardship scheme would be established (refer to Section 2 for further information on specific voluntary and regulated kaitiakitanga whakanaonga - product stewardship schemes in Aotearoa New Zealand).

Looking at the Aotearoa New Zealand kaitiakitanga whakanaonga - product stewardship situation in more detail (see Section 12.1.2.1), WasteMINZ surveyed their membership in 2018 to determine their views on a range of matters including kaitiakitanga whakanaonga - product stewardship and which

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<sup>836</sup> <https://www.mfe.govt.nz/consultations/priorityproducts>

<sup>837</sup> Ministry for the Environment (2019). Proposed priority products and priority product stewardship scheme guidelines: Consultation document. Wellington: Ministry for the Environment.



waste streams were considered highest priority for kaitiakitanga whakanaonga - product stewardship intervention. While it is not the intent to restate earlier discussions, it is important to provide clarity on the views expressed by the member organisations and individuals to provide context:

- 93% supported the concept that well-designed kaitiakitanga whakanaonga - product stewardship schemes can build resilience into Aotearoa New Zealand’s waste and recycling systems to mitigate economic issues;
- 96% agreed in principle that they support the designation of priority product status for problematic waste streams (i.e., tyres, e-waste, batteries, packaging, agrichemicals and farm plastics, refrigerants and other synthetic greenhouse gases, paint); and
- 83% supported, in principle, the establishment of container deposit schemes that are not simply limited to beverage containers. It is also important to note, that of the respondents that did not support a container deposit scheme, three (3) were reported to note that these schemes were economically inefficient, mere greenwashing or that the “problem” the container deposit scheme was to address needed to be defined first. Of those respondents who were unsure whether they supported a container deposit scheme, thirteen (13) respondents were reported to need more information about the scheme.

Another important consideration relates to what container materials should be included in a NZ CRS (e.g., glass, plastic) – a Kaitiakitanga Whakanaonga - Product Stewardship scheme. While the inclusion of glass in container return schemes has been a contentious matter across many global schemes, including in the design of the NZ CRS, the Cost Benefit Analysis (CBA) as discussed in Section 11.12 clearly shows that if glass beverage containers were removed from the NZ CRS then society is made worse off by introducing the scheme. Under this scenario society would be worse off by NZD\$147million in present value (PV) terms.

Consequently, and acknowledging the feedback received from the Scheme Design Working Group (SDWG) and Manatū Mō Te Taiao - Ministry for the Environment, the NZ CRS is to be established as a mandatory kaitiakitanga whakanaonga - product stewardship scheme that is designed and implemented to assist the New Zealand economy transition from a linear economy to ōhanga āmiomio - circular (make-use-return) economy. This will require everyone including the producer, brand owner, importer, retailer and consumer to take responsibility for beverage containers and their impact on the taiao - environment.

## 12.7 Summary of Key Findings

The outcomes of the above Extended Producer Responsibility research indicate a growing awareness of the continued pressure global economies and populations are having on Papatūānuku and rawa taiao - rawa taiao - natural resources to produce the wide range of products currently available on the market. As the research has demonstrated, continued population growth and demand for products and services will continue to place pressure on environmental resources, and to limit this, will require countries to implement policies that improve whakahaere rauemi - resource management and ensure sustainable materials management building on the principles of the pūnaha whakarōpū para - waste hierarchy of reduce, reuse and recycle. To enable this to occur, many countries, particularly those within the Organisation for Economic Co-operation and Development (OECD) have adopted an environmental policy approach in which a producer’s responsibility for a product is extended to the post-consumer stage of a product’s huringa mataora - life-cycle. This policy approach is based on “polluter pays” where the financial responsibility for the entire huringa mataora – life-cycle of the products and packaging is shifted from taxpayers and councils to producers and ultimately the consumer. As a result, Extended Producer Responsibility seeks to encourage and/or incentivise producers to redesign products and packaging reducing the amount of post-consumer material entering ruapara - landfills, increase hangarua - recycling and whakamahi anō - reuse (e.g., refillables) and avoid using materials that may pose risks to human health or the taiao - environment.

While there is no one Extended Producer Responsibility system and associated governance structure that could be simply transposed into a NZ CRS design to cover all eligible scheme material, the three (3) objectives of the NZ CRS, namely:

1. Change the way Aotearoa New Zealand values beverage containers that will see increased hangarua - recycling and new opportunities for refilling;
2. Reduce the volume of plastics and other container litter currently ending up in our streams (i.e., awa – waterways), moana - marine environment, wāhi tūmatanui - public spaces and ruapara - landfills; and
3. Give effect to ōhanga āmiomio - circular economy outcomes and any future priority product guidelines.

will provide the foundation on which the scheme will give effect to the principles of Extended Producer Responsibility. The benefit of applying these foundation Extended Producer Responsibility objectives to the NZ CRS design is to acknowledge and accept the changing global economy and the need to support the New Zealand Government in efforts to transition from a linear economy to ōhanga āmiomio - circular economy. Additionally, recent events including China National Sword and the COVID-19 global health pandemic, highlighted the delicate relationship between reliance on global post-consumer recycling markets (e.g., plastics and fibre) and the volume of post-consumer recyclables produced by economic activity. As a result, Aotearoa New Zealand along with many other countries, is now having to reassess the waste generation and management framework, including, for example, the declaration of priority products requiring producers to develop schemes for Ministerial accreditation to extend producer responsibility for reducing huringa mataora - life-cycle impacts of those products through to investigating onshore processing capacity and considering regulations to establish mandatory kaitiakitanga whakanaonga - product stewardship schemes – such as the NZ CRS.

As countries implement mechanisms to transition from a linear to ōhanga āmiomio - circular economy, utilising mechanisms such as Extended Producer Responsibility and mandatory product schemes (e.g., NZ CRS), opportunities for employment through the establishment of collection facilities and refilling may be supported thereby creating local and national economic opportunities. It is though acknowledged that further detailed modelling and cost-benefit analyses are required during the NZ CRS implementation stage to provide clarity on the opportunities and constraints presented by the NZ CRS (see Section 17 for further discussion).

Taking the above research into consideration, the following Extended Producer Responsibility conclusions can be drawn:

- Extended Producer Responsibility systems are based on “polluter pays” where the financial responsibility for the entire huringa mataora - life-cycle of the products and packaging is shifted from taxpayers and councils to producers and ultimately the consumer (Section 12);
- Extended Producer Responsibility aims to encourage producers to (Section 12):
  - Redesign products and packaging reducing the amount of post-consumer material entering ruapara - landfills;
  - Increase hangarua - recycling (recycling and recoverability are influenced by the producer making products that are easy to reconstitute [i.e., disassemble] and recycle) and reuse; and
  - Avoid using materials that may pose risks to human health or the taiao - environment.
- Legislation is a significant driver in the establishment of Extended Producer Responsibility systems, with most systems being mandatory rather than voluntary (Section 12.1);
- Producers have often been reported to set up Extended Producer Responsibility systems which are managed by Producer Responsibility Organisations (PROs), the equivalent of which is the Managing Agency in the NZ CRS design (Section 12.1.1);

- The guiding Extended Producer Responsibility system principles for governments should provide the following (Section 12.1 and Section 12.1):
  - Provide producers with incentives to change product designs.
  - Stimulate innovations.
  - Take a huringa mataora – life-cycle approach.
  - Clearly define responsibilities.
  - Chose flexible policy instruments adapted to the particular product and waste stream.
- The objective and scope of the Extended Producer Responsibility system should be clearly defined, including (Section 12.3):
  - Producers of the products should be identified;
  - Establishment of reporting and monitoring;
  - Development of appropriate enforcement mechanisms and sanctions;
  - Increase the level of the EPR system ambition;
  - Broadening the scope of products covered;
  - Internalising environmental costs; and
  - Transparency – require the EPR system to make information available to assess scheme performance and to identify ways in which the scheme can be made more efficient and effective.
- To enable the successful establishment of EPR systems, the design and governance of the scheme is key to their performance, for example, setting of scheme targets, compliance monitoring, financial management (including the management of free-riding) (Section 12.1.1);
- Internalisation of end-of-life costs and strict enforcement would strengthen incentives for improving the eco-design of products and packaging whereby the Extended Producer Responsibility system sets fees at a level where they recover the full cost of the end-of-life management of the products covered by the system (e.g., NZ CRS) (Section 12.1.1);
- Three (3) key measures incentivise improved product design and accountability for end-of-life management (Section 12.1 and Section 12.2):
  - Producer responsibility implemented at the level of individual producers to incentivise eco-design of products.
  - Producer fees should be closely linked to the actual end-of-life treatment costs of their products (i.e., costs to collect, consolidate and beneficially use materials), rather than fixed fees and/or modulated fees that differ according to the specific design features that make products more easily recyclable (e.g., Advanced Material Recycling Fee – refer Section 11 for further information).
  - Where products are globally traded, better eco-design incentives could be achieved by harmonising environmentally sensitive design through legislation or financial incentives (e.g., environmental tax).
- There are several key Extended Producer Responsibility system policy drivers which can be implemented either individually or in combination to enable producers to take responsibility for their products and packaging end-of-life management (Section 12.1.2):
  - Product take-back requirements (e.g., the voluntary take-back schemes offered by Resene Paints, Vodafone and Spark).
  - Economic and market-based incentives (e.g., deposit refund, Advanced Disposal Fees, material taxes, combination tax/subsidy).
  - Regulations and performance standards (e.g., requirements on the use of minimum recycled content to encourage, for example, greater take-back of products and packaging).
  - Information (e.g., raising public awareness through measures such as labelling, consumer communication).

- To help achieve a measurable quantitative reduction in the consumption of single-use products there are several conditions which are recommended for the establishment of effective reuse (e.g., refillables) schemes, including (Section 12.1.3 and Section 12.1.4):
  - Container design – containers that have durability enhanced by universal container designs that enable acceptance of containers across different reuse schemes (e.g., standardised bottle design).
  - Hygiene requirements – appropriate washing facilities as well as transportation and storage.
  - Convenience and accessibility – engagement with consumers to highlight the scheme and the use of reusables as alternatives/substitutes for single-use packaging.
  - Scheme infrastructure and scale of scheme – appropriately located drop-off facilities, collection logistics, washing infrastructure, redistribution, customer refunds where appropriate, store marketing, employee training.
- To support and facilitate the development of reuse and/or refillable schemes and to provide consumers with a conscious choice between single-use plastic packaging and more sustainable options, government policy is needed to support this process, including (Section 12.1.3.1 and Section 12.1.4):
  - Include targets on the share of refillable beverage packaging placed on the market.
  - Place a tax on single-use plastics (NOTE: the same principle could equally apply to all types of packaging material) such as an ‘Eco-Fee’ to incentivise producers to seek alternative materials or consider a shift to refillables.
  - Consumer to have visibility on the cost of single-use packaging through payment in store (e.g., visible on shopping receipt).
  - Container return schemes to include a broad range of items and mandate reusable items in the scheme.
  - Introduce incentives and provide financial support for reusable items and systems to overcome barriers to establishing the scheme (e.g., for the establishment of washing facility infrastructure).
  - Modulation of fees on materials that are difficult to recycle versus those that have established recycling pathways and/or are reusable.
  - Support procurement processes to include reusable targets.
- The governance of Extended Producer Responsibility systems involves roles for government, producers and providers of collection and processing services. However, in many global Extended Producer Responsibility systems, the entity established to implement and have responsibility for the EPR system requirements is commonly referred to as the Producer Responsibility Organisation (PRO). The PRO equivalent for the NZ CRS design is the Managing Agency (Section 12.4);
- Managing Agencies can be not-for-profit (typically, e.g., Managing Agencies in British Columbia, Canada are legally obliged to have not-for-profit status), for-profit firms (occasionally) and government agencies (rarely) (Section 12.4); and
- Depending on the structure of the Extended Producer Responsibility system and any associated kaitiakitanga whakanaonga - product stewardship schemes, the consumer may be required to pay at the point of sale a deposit or fee for the cost of collection, recycling and processing the material (Section 12.4 and Section 12.5).

Based on the above research conclusions, Section 12.8 below provides a synthesis of this information in the form of the specific Extended Producer Responsibility components to be included in the NZ CRS design.

## 12.8 Summary of Design Feedback Received

The following table provides a high-level summary of the feedback received from the Scheme Design Working Group (SDWG) members after reviewing the section information. As many suggestions as possible have been incorporated but the NZ CRS Project Team acknowledge that the wide range of views expressed meant not every edit could be accepted. The NZ CRS Project Team is grateful for those who have provided feedback and where possible these have been used to provide further clarity and context throughout this section and to identify areas requiring further assessment during the NZ CRS implementation stage (Section 17).

<b>Extended Producer Responsibility and Kaitiakitanga Whakanaonga - Product Stewardship Feedback – High-Level Summary</b>	
<b>Areas for further Investigation</b>	
The choice of materials and manufacturing process to be improved upon and consider that EPA's safe limits in plastics and non-intentionally added substances (NIAS) are outdated (see Section 17 for further discussion).	
<b>Opposing Views</b>	
<p>Reporting scheme costs on consumers' receipts:</p> <ul style="list-style-type: none"> <li>Members in support state that transparency of the costs to consumers is important to make sure that retailers and beverage producers do not bargain the scheme fees.</li> <li>Members against state that IT development and administration would be expensive, it could exploit commercial information and is not practical for retailers.</li> </ul>	<p>The use of an eco-tax:</p> <ul style="list-style-type: none"> <li>Members in support state that the use an "eco-levy" will incentivise alternatives higher up the waste hierarchy.</li> <li>Members against state that they prefer that each consumer pays for the individual recovery of containers. Some members have noted that tax must be high enough to incentive alternative design and subsidy must be sufficient to cover waste treatment.</li> </ul>
<b>Support the Following</b>	
Eliminating social and environmental costs, more than just internalising environmental costs.	A review period to assess scheme performance, the potential introduction of other products and the deposit value, with consideration of material LCAs and employment opportunities.
The NZ CRS to be mandatory as it will not work if it is voluntary.	EPR to be communicated through product labelling and other forms of communication.
Giving effect to circular economy outcomes, future priority product guidelines and opportunities for recycling and refilling.	

Extended Producer Responsibility and Kaitiakitanga Whakanaonga - Product Stewardship Feedback – High-Level Summary	
Additional Design Considerations	
The inclusion of industrial, commercial and agricultural containers after the review period.	Refillables to be returnable to their normal retailer.

## 12.9 Component(s) to be Included in the New Zealand Container Return Scheme Design

Taking the above key findings into account including feedback from stakeholders involved in the NZ CRS design, the Project Team are of the view that the following Kaitiakitanga Whakanaonga - Product Stewardship components will be included in the NZ CRS design:

- The NZ CRS is a mandatory kaitiakitanga whakanaonga - product stewardship scheme that is designed and implemented to assist the New Zealand economy transition from a linear economy to ōhanga āmiomio - circular (make-use-return) economy.
  - The reason why this is good for Aotearoa New Zealand is that it will (i.e., acknowledging scheme design and associated guidelines) require everyone including the producer, brand owner, importer, retailer and consumer to take responsibility for beverage containers and their impact on the taiao - environment.
- Implementation of regulated scheme review periods comprising of two (2) initial scheme review periods to assess scheme performance and operation (e.g., eligible scheme container return rates, consumer accessibility) and strategic direction set at the end of the year-3 and year-5 financial periods, then every 5-years thereafter.
  - The benefit of two (2) interim scheme review periods is to enable sufficient time for the scheme to build towards optimal performance and enable the Managing Agency to assess the schemes performance, including, for example, the interim annual container return rate targets and the accessibility of a consumer focussed network of container return facilities.
- It is recommended that the specific New Zealand Container Return Scheme regulations provide for and give effect to the following:
  - Producer responsibility implemented at the level of individual producers to incentivise the design of products in keeping with the principles of Extended Producer Responsibility.
  - Stimulate and encourage innovations.
  - Take a full huringa mataora – life-cycle assessment approach (i.e., cradle to cradle).
  - Clearly define responsibilities for all NZ CRS scheme participants.
  - Regulations and performance standards that will see, for example, the use of minimum recycled content and encourage greater recovery and pull through demand of products and packaging (e.g., requirements on the use of minimum recycled content to encourage greater take-back of products and packaging).
  - Economic and market-based instruments including the application of the Advanced Material Recycling Fee for difficult to recycle materials.
    - The benefit to New Zealand provided for by a bespoke container return scheme regulation is to set clear, robust and performance driven requirements to ensure the success of the NZ CRS.

- Establishment of a single independent not-for-profit Managing Agency to manage the operations and performance of the NZ CRS.
  - The benefit of this approach is the ability for one (1) entity to take responsibility for the operations and performance of the NZ CRS coupled with providing clarity of roles and responsibilities to all scheme participants.
- The Managing Agency to give effect to the Kaitiakitanga Whakanaonga - Product Stewardship Responsibility by implementing the following:
  - The specific container return scheme legislative instruments to set a minimum 85% eligible scheme container return rate target and an aspirational eligible scheme container return rate target of 95% (including the establishment of drivers to achieve an aspirational target) against which the Managing Agency scheme performance will be held accountable.
    - Establishing targets for a minimum and an aspirational eligible container return rate means the scheme Managing Agency has set targets against which performance of the scheme can be measured and against which both Management (specifically the Managing Agency Chief Executive Officer) and Governance can be held to account.
  - Establish a risk and compliance monitoring programme.
    - The benefit of this approach is to ensure all scheme participants abide by the specific regulation requirements and any other operational and/or performance standards and/or requirements as established by the Managing Agency. Establishment of a risk and compliance monitoring programme will assist the Managing Agency to identify any operational and/or performance issues which may arise and implement remedial measures as required.
  - Establish and implement a transparent financial management system and Information and Communications Technology (ICT) platform including the management of any free-riding.
    - The provision of a transparent financial accounting system which will benefit the NZ CRS by ensuring scheme finances are protected and managed so as to provide security of information. Managing free-riding will benefit Aotearoa New Zealand by requiring all eligible scheme containers and persons/organisations selling these containers to be registered thereby ensuring all sellers of eligible scheme containers are treated equally and comply with the NZ CRS requirements.
  - Provide clear and transparent reporting of scheme costs to consumers at the point of sale (e.g., visibility of all scheme costs on customer receipt and/or on the scheme website).
    - The benefit of this approach is ensuring consumers have complete transparency of the costs of products, the current deposit rate and the current scheme charges, i.e., the cost of recycling the purchased products. The additional benefit of this approach is the ability for the NZ CRS to facilitate greater public awareness of the kaupapa - principles of Extended Producer Responsibility and by extension greater engagement in environmental stewardship.
  - Promote and encourage the development of the refillables market through options including, but not be limited to:
    - Funding and promoting the benefit and awareness of refillables as a preferred choice to New Zealanders.
    - Working closely with existing and future Aotearoa New Zealand refillable schemes to identify and remove barriers to their growth, irrespective of whether existing or future refillable schemes choose to be included within a NZ CRS or not. This

approach recognises and provides for individual companies to manage and promote their own unique refillable containers and where companies may wish to share a universal bottle.

- Further to bullet 2, investment in or funding of, infrastructure to remove barriers such as the costs associated with the return, re-washing and refilling of bottles.
- Ensuring that the method of return by customers is convenient and accessible and where appropriate and practicable is compatible with existing NZ CRS container collection return facilities.
- Establishment of NZ CRS container return facilities that can accept, sort and store for transportation both eligible single-use beverage containers and reusable beverage containers.
- Support and facilitate the uptake of reusables through the integration of strategic directives embedded within the NZ CRS scheme performance indicators.
- Securing the funding to achieve the above from the scheme fee.

This is in alignment with the three (3) key project outcomes as discussed in Section 1 and noted below:

1. Change the way Aotearoa New Zealand values beverage containers that will see increased hangarua - recycling and new opportunities for refilling;
2. Reduce the volume of plastics and other container litter currently ending up in our streams (i.e., awa – waterways), moana - marine environment, wāhi tūmatanui - public spaces and ruapara - landfills; and
3. Give effect to ōhanga āmiomio - circular economy outcomes and any future priority product guidelines.



## SECTION 13: LEGAL FRAMEWORK

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## Section 13 Legal Framework

Robust legislative instruments are at the centre of a successful container return scheme. Most existing schemes are implemented through legislative instruments that allow for a continuously successful operation. Well thought out legislative instruments allow for the below to be achieved:

- Schemes are operated at maximum efficiency;
- The scheme is protected against fraud; and
- Clear and well-defined obligations and processes are understood by all participants.

Most legislative instruments of existing schemes address common items of the schemes' designs. Some of the common items include:

- The conditions of acceptance for eligible containers;
- The requirements for the collection points and container return facilities;
- The accepted counting methods;
- The forms of refunds that can be provided;
- The amounts of deposits and refunds;
- Signage and scheme awareness requirements;
- Legal obligations of all participants;
- Registration, recording and reporting requirements;
- Application of environmental taxes (e.g., Norway);
- Resource recovery performance indicators; and
- Prohibited activities and penalties.

*Fraudulent activity leads to short-changing and money leaving the scheme, damaging the circular economy created by the scheme, and leaving the country's recycling economy. Hence legal protection against such activities is important.*

The above-mentioned items have largely been discussed in detail in the previous sections. An important instrument of legislation is that it provides for appropriate anti-fraud measures. Fraudulent activity has been undertaken by a range of parties who have attempted to find loopholes in regulations and either gain a financial benefit or avoid the fulfilment of legal obligations from the scheme. This section will focus on the ways regulatory devices have been used to penalise, manage and minimise fraudulent activity. Case studies of fraud and ways of management are identified below.

Where scheme legislative instruments are mentioned for different countries, the names of, for example, the regulation for the specific scheme can be found in Appendix A.

### 13.1 Aotearoa New Zealand Legislative Context

As discussed previously in Section 2, there is growing recognition that the current process by which we manage our waste cannot continue via a linear (take-make-dispose) process. There is also awareness and recognition that the economy must transition from a linear (take-make-dispose) economy to *ōhanga āmiomio* - circular (make-use-return) economy<sup>838</sup>. Recent international market changes including restrictions by China on the importation on waste and recyclables and the recent COVID-19 global health pandemic has highlighted the need to take a closer look at the way Aotearoa New Zealand manages its waste, including current onshore processing and hangarua - recycling (e.g., General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020). The New Zealand Government has established and enacted several key legislative documents that set the requirements for waste minimisation and management. In addition, the New Zealand Government has ratified several international agreements to manage Aotearoa New Zealand's impact on the global waste sector. The following sections outline the national and international legislation and agreements that could influence

<sup>838</sup> <https://www.mfe.govt.nz/waste/circular-economy>

the design and implementation of a NZ CRS. The reader is referred to Section 2 for further detailed legislative information.

While it is not the intent to restate previous discussions, it is important to provide a broad description of the Aotearoa New Zealand waste legislative framework to provide context to the NZ CRS whilst identifying the existing legislation that may enable and support the implementation of a NZ CRS design and establishment of a bespoke NZ CRS legislative instrument.

The three (3) primary legislative Acts below provide the basis for the NZ CRS design with the Waste Minimisation Act 2008 (WMA) providing the regulatory framework to encourage the reduction in the amount of waste produced and disposed of by New Zealanders. However, while the WMA aims to reduce environmental effects while generating economic, social and cultural benefits through recognising the principles of Extended Producer Responsibility. The Act, however, does not provide the detailed legislative framework needed by a container return scheme to ensure robust, clear and defined requirements are in place to give effect to the ultimate success of the scheme.

Further, the outcomes of the research, as well as case study examples of well performing container return schemes, suggest that a bespoke NZ CRS legislative instrument may be required to provide clearly defined scheme specific conditions. As a result, the intent of a bespoke NZ CRS legislative instrument will be to provide the necessary clarity to all scheme participants on their respective roles, responsibilities, and importantly, requirements of the scheme to meet consumer expectations. The bespoke NZ CRS legislative instrument may include but not be limited to the following components:

- Scheme licensing and registration requirements (e.g. registration of container return facilities, eligible scheme containers);
- Definitions of scheme participants, including roles and responsibilities;
- Eligible scheme container labelling requirements;
- Import requirements (e.g., NZ CRS eligible container labelling requirements);
- Authority to apply and administer the NZ CRS fee including the deposit, scheme fees, Advanced Material Recycling Fee and Environmental/Eco-Fee;
- A minimum eligible container return rate target of 85%;
- An ambitious eligible container return rate target of 95%;
- Specifying the number of container return facilities;
- The structure and function of the Managing Agency and scheme Governance Board;
- The role and responsibility of the Managing Agency and scheme Governance Board;
- Managing Agency and scheme Governance Board accountability requirements;
- Eligible container conditions of acceptance, including labelling;
- Reporting requirements;
- Conditions regarding the use of any unredeemed deposits; and
- Scheme review periods to assess, for example, scheme performance and deposit level.

It is also acknowledged that a detailed legal assessment will be required during the NZ CRS implementation stage to ensure that all legal components have been addressed and accounted for in the bespoke NZ CRS legislative instruments to support the implementation of the NZ CRS and the ultimate success of the scheme.

Since 2002, the New Zealand Waste Strategy ('the Strategy') has provided direction to local government, businesses (including the waste industry) and communities to manage and deliver environmental, social and economic benefits to New Zealanders. An update in 2010 set the following strategic goals to provide greater flexibility for waste management and minimisation:

- Reduce the harmful effects of waste; and
- Improve the efficiency of resource use.

To give effect to the Strategy, three (3) primary legislative Acts provide the drivers to enable waste management and minimisation in Aotearoa New Zealand:

4. The Waste Minimisation Act 2008 (WMA)
  - a. Broadly, the Waste Minimisation Act 2008 was established to provide a regulatory framework to encourage the reduction in the amount of waste produced and disposed of by New Zealanders with the aim to reduce environmental effects whilst generating economic, social and cultural benefits, including consideration of tikanga Māori. The WMA does not though provide the requirements needed to provide the degree of clarity or specific scheme directives to ensure scheme participants are aware of their regulatory requirements. For example, the research suggests most global container return schemes are supported by bespoke legislative instruments that recognise and acknowledge existing legislation which give effect to the bespoke NZ CRS legislative instrument. These global legislative instruments specify the scheme requirements against which scheme performance is measured and against which the Managing Agency and scheme Governance Board are held accountable.
5. The Local Government Act 2002
  - a. The Local Government Act 2002 provides the legislative framework for democratically elected local authorities to promote the social, economic, environmental and cultural well-being of communities in the present and for the future. This includes taking “appropriate account of the principles of the Treaty of Waitangi” and facilitating “participation by Māori in local authority decision making processes” (Section 4). The Act also gives effect to any schemes (including kaitiakitanga whakanaonga - product stewardship schemes) accredited through the WMA, including any bylaws defined within the Local Government Act 2002.
6. The Resource Management Act 1991 (RMA)
  - a. The Resource Management Act 1991 (RMA) is Aotearoa New Zealand’s key environmental legislative document providing the framework for the sustainable management of environmental resources (including development activities), including recognition of Te Tiriti o Waitangi principles and matters of national significance – taonga such as land, water and sacred sites. The RMA also manages and controls the environmental impacts of waste facilities such as disposal facilities, recycling and recovery facilities and cleanfills.

In addition to the three (3) primary legislative Acts, several other national legislative documents are relevant to the establishment of a NZ CRS design, including:

- Te Tiriti o Waitangi – The Treaty of Waitangi;
- Litter Act 1979;
- Climate Change Response Act 2002;
- Health and Safety at Work Act 2015;
- Biosecurity Act 1993;
- Trans-Tasman Mutual Recognition Act 1997;
- Imports and Exports (Restrictions) Act 1988;
- Customs and Excise Act 2018;
- Commerce Act 1986;
- Commerce Amendment Act 2018;
- Food Act 2014;
- Hazardous Substances and New Organisms Act 1996; and
- Ozone Layer Protection Act 1996.

In addition to the New Zealand legislation, there are several international agreements that Aotearoa New Zealand is party to, which may affect the import and export of waste including recyclable materials and which will require detailed legal analysis during the implementation of the NZ CRS design, including:

- Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol);
- Free Trade Agreements;
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal;
- The Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region (Waigani Convention);
- Organisation for Economic Co-ordination and Development Decision C(2001)107/FINAL (OECD Hazardous Waste Decision); and
- Stockholm Convention on Persistent Organic Pollutants.

This section does not preclude the addition of other and/or update of existing legislation and regulations that may influence the design of the NZ CRS. For example, the New Plastics Economy Global Commitment which may also have relevance to a NZ CRS as it is aimed at bringing together businesses, governments and other organisations to address plastic waste and pollution at its source.

## 13.2 Penalties for Fraudulent Activity

There have been numerous reported situations of fraudulent activities undertaken in existing container return schemes where members of the community have either attempted to illegally benefit economically from the scheme or have simply not complied with their obligations under the scheme. Fraudulent activity leads to short-changing and money leaving the scheme, damaging the *ōhanga āmiomio* - circular economy created by the scheme, and leaving the country's recycling economy. Hence legal protection against such activities is important.

It is acknowledged that fraudulent activities are a significant matter for consideration in the design of a NZ CRS and as a result must be supported by the development of appropriate measures (e.g., contractual arrangements, data verification, audit and compliance monitoring) in the implementation phase and enacted throughout the life of the scheme. For example, the establishment of the NZ CRS will generate significant scheme finances through the deposit and handling fee, all of which must be supported by robust data and reporting processes to identify quickly and efficiently any potential or actual cases of fraudulent activities. Consequently, to address and minimise potential or actual scheme fraud, the NZ CRS will require robust and transparent audit, compliance and financial management processes to enable the Managing Agency to identify, investigate and where appropriate take the necessary action to mitigate any fraudulent situations and/or activities.

To understand how fraud is undertaken, Section 13.2.1 below provides case studies showing the types of fraudulent activities that have been undertaken and the penalties that have been applied. The following sections show how legislative instruments have addressed the management and minimisation of fraudulent activity in several international jurisdictions.

### 13.2.1 Case Studies

#### 13.2.1.1 New South Wales

On 02 April 2020, the New South Wales Environment Protection Authority (EPA) announced that it has fined Cleanaway Pty Limited AUD\$15,000 for sorting and storing returned containers from the scheme at their site in Beresfield, which did not have a licence to accept the containers.

Cleanaway had received more than 15,000 tonnes of containers between 1 November 2018 and 31 October 2019. EPA Director Regulatory Operations Metro North Adam Gilligan stated: "Cleanaway

holds over 30 environment protection licences for waste related activities in New South Wales and should be aware of the process to lawfully process and store waste in New South Wales. Investigations found that waste was being stored without proper controls near a stormwater drain, increasing the risk of pollution and environmental harm. The New South Wales Container Deposit Scheme is designed to remove litter from the taiao - environment, and it is important that the taiao - environment remains protected throughout the entire process<sup>839</sup>.

### 13.2.1.2 South Australia

After decades of operation, the first prosecution to occur under the South Australian scheme occurred in June 2018. A man was fined almost AUD\$6,000 for having returned containers, collected in New South Wales, to depots in South Australia. At the time of collection in June 2016, New South Wales did not have a container return scheme, hence the man had not paid a deposit and was trying to receive an AUD\$7,000 refund. The man was seen arriving at a collection depot with 37 bales, four (4) clear plastic bags, one (1) garbage bag and two (2) chaff bags, all containing cans. Case Judge Susanne Coles stated: "It was a dishonest, planned, course of conduct involving the placement of a newspaper advertisement and the sourcing of cans from numerous sources in a deliberate attempt to obtain a financial advantage in South Australia to which the defendant knew he was not entitled"<sup>840</sup>.

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*The types of fraud undertaken can be categorised by two primary activities; (1) fraud undertaken for illegal economic profit and (2) fraud undertaken to avoid the fulfilment of legal obligations*

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### 13.2.1.3 Michigan

In 2016, a man in Michigan tried to return more than 10,000 bottles in Michigan, which were collected from outside of Michigan, where the deposit for the containers was lower than the refund amount provided in Michigan. The man received USD\$5,000 in fines. The man could have received the alternate penalty that Michigan has, being a penalty of up to five (5) years in prison for one (1) felony count of beverage return of non-refundable bottles<sup>841</sup>.

### 13.2.1.4 New York

The North Bergen Beverage Company, a New Jersey based beverage supplier, received in 2018 the largest fine given for violation of the scheme in the history of New York's Bottle Bill. The company was found guilty of selling millions of eligible containers to retailers without collecting the deposit and without submitting the collected deposit in a dedicated account as required by law. By not collecting the deposit, North Bergen Beverage was illegally competing against competitors, selling cheaper beverages, and denying the state its revenue from unredeemed deposits<sup>842</sup>.

The beverage company received a penalty of a total of USD\$550,000 that included payment of USD\$400,000 in new penalties, on top of previous required payments of USD\$100,000 and USD\$50,000 for the cost of the investigation. The penalty was more than three (3) times greater than the previous largest penalty given to a beverage distributor for violating New York's scheme. North Bergen Beverage was also required to suspend its sales covered by the scheme in New York for three (3) years. If the company violate this during the three (3) years, they are required to pay USD\$400,000. The paid penalties are put into New York's Environmental Protection Fund.

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<sup>839</sup> New South Wales Environment Protection Authority, 2019, Cleanaway fined \$15,000 for storing waste without a licence, available from [https://www.epa.nsw.gov.au/news/media-releases/2020/epamedia200402-cleanaway-fined-\\$15000-for-storing-waste-without-a-licence](https://www.epa.nsw.gov.au/news/media-releases/2020/epamedia200402-cleanaway-fined-$15000-for-storing-waste-without-a-licence)

<sup>840</sup> Container Deposit Systems, 2018, Scheming a Scheme when it's NOT ok to Container Deposit, available from: <https://www.containerdepositsystems.com.au/articles/scheming-a-scheme-when-its-not-ok-to-container-deposit>

<sup>841</sup> Container Deposit Systems, 2018, Scheming a Scheme when it's NOT ok to Container Deposit, available from: <https://www.containerdepositsystems.com.au/articles/scheming-a-scheme-when-its-not-ok-to-container-deposit>

<sup>842</sup> Brian Taylor, 2018, NY Bottle Bill violator receives \$500,00 penalty, available from: <https://www.recyclingtoday.com/article/new-york-can-bottle-bill-recycling-penalty/>

### 13.2.1.5 California

In 2019, CVS Health Corporation, a large pharmacy retail chain, was fined by California's Managing Agency CalRecycle USD\$3.6million for failing to accept and collect eligible containers at in-store locations. This was the largest enforcement action in California against a retailer for failing to fulfil their obligations under the scheme. The company was found to have been refusing to refund deposits for eligible containers and was not paying the alternative \$100 daily fee at 81 of its 848 stores. CalRecycle stated that, through this penalty, it was sending a message to all retailers that they are held accountable for their obligations under the scheme<sup>843</sup>.

### 13.2.1.6 Alberta

The operators of Alberta Reclaim and Recycle were accused of ripping off the Alberta scheme of more than CAD\$750,000 over a two-year period by receiving a refund for more than eight (8) million cans smuggled in from out of the Alberta province. The fraudulent activity was identified by both immigration officials and the Alberta Beverage Container Management Board as sudden reports produced in 2011 indicated that millions more cans and bottles were flowing through the scheme compared to the expected annual average.

Further, due to the structure of the Alberta scheme, data for individual depots was available and indicated that Alberta Reclaim and Recycle was suddenly reporting 1000% more returned containers. With this reported data, the Alberta Beverage Container Management Board could verify the number of returned containers to the average per day returnable rate (i.e., 1,550 returned containers) and an understanding of beverage consumption habits. The fraudulent activity carried out by Alberta Reclaim and Recycling involved the organisation travelling to the Yukon Territory to purchase thousand-pound bales of crushed cans and assuring the seller that the cans would be recycled and melted down for whakamahi anō - reuse. However, it was reported that Alberta Reclaim and Recycling would break apart the bales and recover the aluminium cans and return these in Alberta for the 10-cent per container refund<sup>844</sup>.

## 13.2.2 Penalties for Illegal Economic Profit

As is evident by the selected case studies, fraudulent activities can be undertaken by a range of parties. The types of fraud undertaken can be categorised by two (2) primary activities, fraud undertaken to gain illegal economic profit and fraud undertaken to avoid the fulfilment of legal obligations. The sections below identify some of the penalties applied in the legislative instruments of existing schemes for violators who undertake activities to gain an economical benefit. Section 13.2.3 identifies the penalties applied in different schemes for evading legal obligations.

In addition to the case studies mentioned above, examples of reported fraudulent activities that have been undertaken for economic profit include:

- Photocopying or production of fake barcodes, labels and deposit vouchers to generate fake eligible containers under the scheme;
- Manufacture of fake containers for a deposit refund;
- Retailers and/or processors trying to claim extra handling fees;
- Customer or shop staff feeding containers through twice; and
- Container collectors feeding containers through RVMs twice.

<sup>843</sup> Samantha Solomon (ABC10), 2019, CalRecycle crackdown: CVS fined \$3.6 million for not recycling bottles and cans, available from: <https://www.abc10.com/article/news/local/california/cvs-fined-36-million-for-not-recycling-bottles-and-cans/103-f23e10c4-86f9-499f-88fd-6eb74bf3>

<sup>844</sup> <https://nationalpost.com/news/canada/can-scam-how-alberta-broke-open-what-may-be-the-largest-returnablesfraud-in-canadian-history>



### 13.2.2.1 Australia

In New South Wales, if suppliers are found to be selling eligible containers that are not compliant with the regulations, they are subject to penalties, which include the possibility of the Environment Protection Authority revoking the approval of that container and making it an offence to be sold in the state. As is common with many existing schemes, penalties for non-compliances did not apply during the transition period that was applied at the start of the operation of the scheme<sup>845</sup>.

In South Australia, a maximum penalty of AUD\$30,000 can be given to any person who seeks a refund on beverage containers sold outside of South Australia<sup>846</sup>.

### 13.2.2.2 United States of America

The laws for most American schemes state that a person is prohibited from defrauding the state by redeeming beverage containers, which were purchased from outside of the state. The person is held accountable if, while they are receiving a refund for the containers, they have reason to know that the containers were bought out of state. Some schemes hold violators accountable for each ineligible beverage, while others have a limit of a number of ineligible beverages that elicit a penalty.

In California, a person convicted of redeeming ineligible containers is subject to a fine, imprisonment or both. The penalty depends on the amount of money obtained illegally. The range of penalties includes:

- A person who illegally obtains less than USD\$950 is subject to a fine up to USD\$1,000, imprisonment up to 6 months, or both;
- If more than USD\$950 is illegally obtained, more serious penalties are given; and
- If the crime does not involve receiving money, the violator is subject to a fine of USD\$100 for the initial violation and then USD\$1,000 for each subsequent violation. Additional civil penalties are also possible<sup>847</sup>.

In Maine, the law states that it is a violation to possess more than 48 incorrectly labelled containers, and a person is prohibited from redeeming more than 48 empty containers if they have a reason to know that the containers were purchased out of state. A violator is subject to a civil penalty of either USD\$100 for each container over 48 or USD\$25,000 for each tender of containers, whichever is the greater. Licenced waste facilities are exempt from this requirement. Manufacturers and distributors are able to bring civil action against someone, other than a local container return facility, who possesses more than 48 containers that they have reason to know are purchased out of state<sup>848</sup>.

In Massachusetts, a person is prohibited from redeeming more than 240 empty containers that they have reason to know were purchased out of state. Violators are subjected to a civil penalty of the greater of USD\$100 for each container or USD\$25,000 for each tender of containers<sup>849</sup>.

In Michigan, a person is subject to a civil fine and/or imprisonment, depending on the number of illegible containers, and if the action is a first or subsequent offence. The range of penalties includes the below:

<sup>845</sup> NSW EPA, 2019, NSW Supplier Obligations.

<sup>846</sup> [https://www.epa.sa.gov.au/environmental\\_info/container\\_deposit/faqs](https://www.epa.sa.gov.au/environmental_info/container_deposit/faqs)

<sup>847</sup> Kristen L. Miller, 2013, Interstate Bottle Redemption Fraud, available from: <https://www.cga.ct.gov/2013/rpt/2013-R-0006.htm>

<sup>848</sup> [https://www.epa.sa.gov.au/environmental\\_info/container\\_deposit/faqs](https://www.epa.sa.gov.au/environmental_info/container_deposit/faqs)

<sup>849</sup> Kristen L. Miller, 2013, Interstate Bottle Redemption Fraud, available from: <https://www.cga.ct.gov/2013/rpt/2013-R-0006.htm>

- Returning 25 to 100 illegible containers subjects the violator to a fine of up to USD\$100;
- Returning more than 100 but less than 1,000 illegible containers, or the violator is a repeat offender, subjects the violator to a fine up to USD\$1,000, imprisonment for up to 93-days or both; and
- Felony convictions with higher fines and lengths of imprisonment are also possible. If dealers and distributors are knowingly refunding illegible containers, they can be also found guilty for violating the law and must pay restitution<sup>850</sup>.

In New York, the range of penalties includes the below:

- Violators are subject to a fine up to USD\$500, and up to USD\$500 for each day the violation continues;
- A distributor who violates the law is subject to a civil penalty up to USD\$1,000 and up to USD\$1,000 for each day the violation continues;
- A person who wilfully tenders more than 48 empty containers for redemption, when the person has reason to know it was purchased out of state, is subject to a fine of up to USD\$100 for each container or up to USD\$25,000 for each tender of containers<sup>851</sup>; and
- If someone sells eligible containers without being registered under the law, they are subject to a penalty to be assessed by the commissioner of taxation and finance (the commissioner), of an amount not to exceed USD\$500 for the first day on which the sales are made, plus an amount up to USD\$500 for each subsequent day on which sales are made, up to USD\$25,000 in the aggregate<sup>852</sup>.

In Vermont, violators who redeem containers knowingly purchased out of state are subject to a fine of up to USD\$1,000 for each violation. Container return facilities and retailers can also be penalised for refunding ineligible containers<sup>853</sup>.

### 13.2.3 Penalties for Failing to Fulfil Scheme Legal Obligations

Similar to penalties being applied for attempts to make an income by cheating the scheme, penalties are also included in scheme legislative instruments for failing to fulfil the legal obligations for different parties under the scheme. Some examples where parties have failed to fulfil their roles, as required by the legislative instruments and the penalties that apply, are identified below.

#### 13.2.3.1 Australia

In New South Wales, the Scheme Coordinator or network operator can be issued with a tax invoice for a financial penalty. The Scheme Coordinator or network operator are subject to paying unpaid amounts at a penalty interest rate, if payment claims made by others are not made on time. The interest cannot be passed onto suppliers as a scheme cost and must be paid by the Scheme Coordinator<sup>854</sup>.

*Similar to penalties being applied for attempts to make an income by cheating the scheme, penalties are also included in regulations for failing to fulfil the legal obligations for different parties under the scheme.*

<sup>850</sup> Kristen L. Miller, 2013, Interstate Bottle Redemption Fraud, available from: <https://www.cga.ct.gov/2013/rpt/2013-R-0006.htm>

<sup>851</sup> Kristen L. Miller, 2013, Interstate Bottle Redemption Fraud, available from: <https://www.cga.ct.gov/2013/rpt/2013-R-0006.htm>

<sup>852</sup> The New York State Senate, 2017, New York State Environmental Conservation Law

<sup>853</sup> Kristen L. Miller, 2013, Interstate Bottle Redemption Fraud, available from: <https://www.cga.ct.gov/2013/rpt/2013-R-0006.htm>

<sup>854</sup> Return and Earn, 2020, Scheme Payments and Contribution Methodology, available on: [https://returnandearn.org.au/wp-content/uploads/2018/05/Supplier-Scheme-Payments-and-Contribution-Methodology\\_SPCM-002.pdf](https://returnandearn.org.au/wp-content/uploads/2018/05/Supplier-Scheme-Payments-and-Contribution-Methodology_SPCM-002.pdf)

Additionally, a container may be rejected in New South Wales by the Environment Protection Authority (EPA), according to the requirements specified in the regulations. Reasons can include if the EPA considers that the material of which the container is composed, including any labelling, is not suitable for hangarua - recycling, whakamahi anō - reuse or, having regard to the objects of the Act, any other appropriate means of disposal<sup>855</sup>.

### 13.2.3.2 United States of America

In New York, several violations and penalties are identified in the law. These are listed below:

- The law prohibits anyone from intentionally programming or tampering with the proper operation of an RVM in order to wrongfully elicit deposit money;
- If deposit initiators fail to pay 80% of the unredeemed deposits to the state, they are required to pay an amount equal to the balance which would have been outstanding at the time as soon as they are requested by the commissioner;
- The commissioner has the authority to refuse to renew or revoke the registration of a deposit initiator, if the commissioner has information that the regulation has been violated by the deposit initiator. Violations include, but are not limited to:
  - Failure to submit quarterly reports;
  - Failure to make payments as part of the regulations;
  - Providing false or fraudulent information; and
  - Knowingly supporting another person in violating the law.
- A deposit initiator whose registration has been revoked or not renewed must stop undertaking business as a deposit initiator in the state, until a new registration for the title has been issued. Once revoked, the deposit initiator cannot apply for registration for two (2) years from the date that the revocation has taken effect; and
- The deposit initiator will not be penalised if they have reasonable cause for not submitting quarterly payments or maintaining accounts or records. However, if no reasonable cause is shown, and the deposit initiator has been negligent, the deposit initiator will be subject to a penalty to be assessed by the commissioner, up to USD\$1,000 for each quarter during which the failure occurred. An additional penalty of up to USD\$1,000 is applied for each quarter that the failure continues.

Additionally, the law states that if a revocation or non-renewal of a licence is proposed, a notice is to be given to the deposit initiator. The notice includes a statement advising the deposit initiator that the revocation or non-renewal of registration can be challenged through a hearing process, and that the petition can be filed with the commissioner within 90-days after the notice is issued<sup>856</sup>.

Similarly, in California, violations and penalties are identified in the law and are listed below:

- The State Government has the authority to undertake enforcement action against a certified recycling centre or processor that fails to comply with the regulations. Action includes but is not limited to denying claims for payments or terminating the certification of the certified recycling centre or processor;
- The state department can take enforcement action at any time within five (5) years after the department has discovered a violation;
- The regulation outlines the hearing process for violations that lead to unfair hangarua - recycling competition. The law states that the intention is to ensure that handling fees paid to a supermarket are not used for the purpose of engaging in unfair and predatory processing, and that fees are not used to reduce recycling rates of other recycling centres. The department is

<sup>855</sup> New South Wales Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation 2017

<sup>856</sup> The New York State Senate, 2017, New York State Environmental Conservation Law

authorised to complete an audit of the payments for the redemption of the beverage containers being paid by the supermarket. The supermarket is given an opportunity to rebut the presumption of unfair and predatory pricing. If found guilty, the law identifies the range of enforcements that apply;

- Penalties apply to certificate holders, registrants, officers, directors, managing employees or anyone who contributes to fraudulent operations. The penalties include the below:
  - Revocation of a certificate or registration;
  - Suspension of a certificate or registration;
  - Imposition on the certificate or registration of any conditions that the State Government determines would further the goals of the law;
  - Issuance of a probationary certificate or registration with conditions determined by the State Government;
  - Collection of money improperly paid to the certificate holder;
  - Imposition of civil penalties; and
  - Suspension for a specified period or for a permanent time of the eligibility of a supermarket site, rural region hangarua - recycling, non-profit convenience zone, to receive handling fees.
- Penalties for non-compliance with the required recycled content in eligible containers can range up to USD\$50,000 per violation for a maximum of USD\$100,000 per product manufacturer<sup>857</sup>;
- In the course of an enforcement action, the department is not prohibited from releasing any information that the department determines to be necessary; and
- Other violations identified in the law include the below:
  - Knowingly, with intent to defraud, submitting a false or fraudulent claim;
  - Failing to accurately report the number of beverage containers sold;
  - Failing to make the required payments;
  - Redeeming out of state, rejected or previously redeemed containers;
  - Returning redeemed containers into the marketplace for redemption;
  - Bringing out of state, rejected, ineligible containers to the marketplace for redemption; and
  - Submitting a false or fraudulent claim for handling fee payments<sup>858</sup>.

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*The inclusion of a barcode on eligible containers allows for accurate data collection for reporting and financial auditing. Barcodes work by ensuring that each container can be electronically read, therefore determining the container as either eligible or ineligible, and identifying containers that have been already counted and processed.*

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In Connecticut, if payment is not made by a deposit initiator by a particular date, the state can fine the deposit initiator 10% of the amount due or USD\$50, whichever amount is greater. The amount due accrues interest at 1% per month from the due date. Penalties or interest cannot be paid with funds in the special account, where deposit and refund amounts are deposited from the deposit initiator to the state<sup>859</sup>.

In Oregon, retailers that illegally refuse to accept containers are subject to a fine of up to USD\$500. Each day that a violation occurs constitutes a separate violation with a separate sanction<sup>860</sup>. In Michigan,

<sup>857</sup> CM Consulting Inc., 2018, Who Pays What? An Analysis of Beverage Container Collection and Costs in Canada

<sup>858</sup> California Department of Resources Recycling and Recovery, 2019, California Beverage Container Recycling & Litter Reduction Act.

<sup>859</sup> State of Connecticut Department of Energy & Environmental Protection, year unknown, Bottle Bill FAQ, available from: [https://www.ct.gov/deep/cwp/view.asp?a=2714&q=324834&depNav\\_GID=1645](https://www.ct.gov/deep/cwp/view.asp?a=2714&q=324834&depNav_GID=1645)

<sup>860</sup> Oregon Liquor Control Commission, 2020, Oregon's Bottle Bill, Frequently Asked Questions, available from: [https://www.oregon.gov/olcc/docs/bottle\\_bill/bottle\\_bill\\_faqs.pdf](https://www.oregon.gov/olcc/docs/bottle_bill/bottle_bill_faqs.pdf)

if stores do not accept eligible containers from consumers, consumers are told to contact the Michigan Department of Attorney General's, Consumer Protection Division and file a complaint<sup>861</sup>.

### 13.2.3.3 Europe

In Germany, the violations outlined in the law are in relation to any person who deliberately or negligently undertakes the below:

- Fails to accept returned empty packaging in time to send it for whakamahi anō - reuse or hangarua - recycling;
- Fails to remove secondary packaging and fails to give the consumer the opportunity to remove or return secondary packaging;
- Fails to draw the attention to the opportunity to return packaging or to do so properly or completely;
- Fails to provide collection containers;
- Fails to consign secondary packaging to whakamahi anō - reuse or hangarua - recycling;
- Fails to take part in a nation-wide deposit scheme;
- Transfers packaging responsibility to final consumers;
- Fails to draw up documentation properly, completely or in time;
- Fails to deposit a certificate properly, completely or in time;
- Fails to deliver packaging to recovery;
- Fails to ensure the collection of packaging;
- Fails to furnish evidence properly, completely or in time;
- Fails to mark single-use packaging properly or in time;
- Refunds a deposit without the packaging being returned; and
- Fails to submit a declaration of compliance properly, completely or in time.

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*The fraud implications of not mandating container labelling can be seen in the Michigan scheme. Prior to 2008, container producers were not required to have a unique state specific mark. However, this led to ineligible containers being returned by consumers and receiving a refund on them.*

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If packaging materials in Germany do not meet the specific recovery quotas outlined in the law, the management authority of the scheme can revoke the licence of the packaging material and will make the revocation public. Additionally, the management authority has the right to prohibit the inclusion of the packaging in the scheme if there is no evidence of the packaging's compatibility with the compliance required by scheme, especially where the packaging is believed to have negative impacts on the public good and on people's health and well-being<sup>862</sup>.

In Denmark, the law identifies 54 reasons why fines can be imposed. Some of these reasons are identified below and include if a party:

- Fails to take back packaging;
- Fails to ensure that packaging is recycled;
- Fails to register packaging with the Managing Agency in accordance with the regulations;
- Conducts test marketing or distributes samples in violation of the regulations;
- Produces a deposit mark in violation of the regulations;
- Fails to pay deposits to the Managing Agency;
- Fails to keep account of the number of marketed packaging item;

<sup>861</sup> Department of Natural Resources and Environment, 2010, Michigan Bottle Deposit Law Frequently Asked Questions, available from [https://www.michigan.gov/documents/deq/dnre-whmd-sw-mibottledepositlawFAQ\\_318289\\_7.pdf](https://www.michigan.gov/documents/deq/dnre-whmd-sw-mibottledepositlawFAQ_318289_7.pdf)

<sup>862</sup> Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, 2009, Packaging Ordinance, available from: <https://www.bmu.de/en/law/fifth-amending-ordinance-on-the-avoidance-and-recovery-of-packaging-wastes/>

- Fails to report on the empty refillable packaging accepted;
- Fails to use collection equipment as directed by the Managing Agency;
- Purchases and installs compactors and containers systems in violation of the regulations;
- Enters into an agreement with an operator in violation of the regulations;
- Fails to prepare annual reports, interim reports and budgets;
- Fails to provide information to the auditing company or the Danish Environment Protection Authority; and
- Gives incorrect or misleading information or documentation.

The penalties can be increased from fines to imprisonment of up to two (2) years if:

- The violations are found to be intentional or because of gross negligence;
- The taiao - environment has been adversely affected or exposed to danger due to the violation; or
- The violation led to or was made with the intention to achieve a financial benefit.

Companies can also incur criminal liability according to the regulations in the Criminal Code<sup>863</sup>.

### 13.3 Anti-Fraud Measures

Penalties are one of several measures for discouraging fraud and encouraging compliance with the law. Besides the clear identification of contractual obligations of all involved parties, the violations and the penalties for non-compliance, a number of other measures are identified in the legislative instruments of existing schemes in order to manage and minimise fraudulent activity. Anti-fraud measures that have been used across different global schemes are identified below. It is important to note that the anti-fraud purpose of these measures is one of the many reasons why these systems have been incorporated. Other considerations for their use include improved efficiencies, consumer preferences and more. The other reasons for their applications have been discussed throughout previous sections.

To minimise potential or actual fraud from occurring within the NZ CRS, the design will consider the various methods implemented across the global container return schemes that have resulted in minimisation of scheme fraud. Of particular note is the application of barcodes and a specific scheme marking, automated counting, crushing of containers, verification processes, record keeping, key performance indicators and quotas, contractual agreements and signage, all of which have been successfully used across many global container return schemes to identify and minimise fraudulent activities. Of note, many global schemes are impacted by cross-border fraudulent activities including the redemption of deposits on scheme containers sold from outside of the schemes jurisdiction and the redemption of deposits on non-scheme eligible containers where container return facilities are invoiced on the weight of a block of compacted material. Fortunately, as an island nation, Aotearoa New Zealand has strict border monitoring and control measures in place, however it is acknowledged that as seen in Australia, the importation of ineligible scheme material from neighbouring states and from outside Australia may occur. Taking this into consideration, the NZ CRS will need to establish relationships with, for example, Aotearoa New Zealand customs to monitor and manage (e.g., import documentation) potential importation of ineligible containers through to the establishment of robust and transparent audit and compliance processes to monitor and track activities carried out at container return facilities (e.g., counting, baling and compaction of material).

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*Penalties are one of several measures for discouraging fraud and encouraging compliance with the law.*

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<sup>863</sup> GlobalDenmark Translation, 2017, Statutory Order on Deposits on and the Collection etc. of Packaging for Certain Packages.

### 13.3.1 Barcodes and Specific Scheme Marking

Barcodes as well as scheme specific refund markings have been applied to identify and verify eligible containers and minimise fraud. In addition to providing anti-fraud measures, the inclusion of a barcode on eligible containers allows for accurate data collection for reporting and financial auditing. Barcodes work by ensuring that each container can be electronically read, therefore determining the container as either eligible or ineligible, and identifying containers that have been already counted and processed.

The New South Wales scheme regulations state that all eligible containers must bear either a GTIN (Global Trade Item Number) barcode<sup>864</sup> or comply with the GS1 standards<sup>865</sup>. In addition to barcodes, consumers in Queensland are required to create a scheme ID, a 9-character alphanumeric code that allows the Managing Agency to process payments electronically. This helps with holding consumers accountable for the loads redeemed and discouraging consumers from committing fraud. Additionally, in collection systems such as bag drops, a unique tag, issued from the bag-drop location, displaying the customers scheme ID and transaction ID is attached to the bag before it is dropped off in order to track the containers against the respective customer.

The fraud implications of not mandating container labelling can be seen in the Michigan scheme. Prior to 2008, container manufacturers were not required to have a unique state specific mark. However, this led to ineligible containers being returned by consumers and receiving a refund on them<sup>866</sup>. *The Beverage Container Redemption Antifraud Act, Act 388 of 2008* and *The Reverse Vending Machine Antifraud Act, Act 387 of 2008* were enacted to help prevent fraud. One of the laws stated that a machine-readable, unique state-specific mark is required to be labelled on eligible beverage containers. Violators of this law were subject to fines and/or imprisonment. In November 2012 however, the Sixth Circuit Court of Appeals determined that this requirement was unconstitutional because it violated the U.S Constitution's Commerce Clause. The court ruled that the requirement created an impermissible extraterritorial effect by requiring manufacturers and distributors to adopt the unique labelling system without considering less burdensome alternatives<sup>867,868</sup>.

In New York, the law states that beverage containers are required to be registered and bear a unique Universal Product Code (UPC) specific to New York. The unique UPC identifies the product as being offered for sale in New York and prevents illegal redemption of containers purchased out of state. While identified in the regulations, this requirement however was decided not to be enforceable due to a result of a stipulated final judgement in the court case (*IBWA v Paterson*), where the plaintiffs alleged, among other things, that the unique UPC requirements violated the Commerce Clause of the U.S. Constitution<sup>869</sup>.

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<sup>864</sup> Defined in the New South Wales Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation 2017 regulation as a product barcode that contains a Global Trade Item Number (GTIN) encoding and complies with the GS1 Standard

<sup>865</sup> Defined in the New South Wales Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation 2017 means the GS1 General Specifications standard published by GS1 AISBL

<sup>866</sup> The University of Vermont, 2012, Vermont Legislative Research Service.

<sup>867</sup> Kristen L. Miller, 2013, Interstate Bottle Redemption Fraud, available from:

<https://www.cga.ct.gov/2013/rpt/2013-R-0006.htm>

<sup>868</sup> Department of Natural Resources and Environment, 2010, Michigan Bottle Deposit Law Frequently Asked Questions, available from [https://www.michigan.gov/documents/deq/dnre-whmd-sw-mibottledepositlawFAQ\\_318289\\_7.pdf](https://www.michigan.gov/documents/deq/dnre-whmd-sw-mibottledepositlawFAQ_318289_7.pdf)

<sup>869</sup> The University of Vermont, 2012, Vermont Legislative Research Service.

In Germany, to be eligible for a refund, containers must be marked with the security logo, a barcode and the Deutsche Pfandsystem GmbH (DPG) logo. To obtain the special inks required for the security logo, label printers and can makers must be registered and certified with DPG<sup>870</sup>. Further, the scheme official barcode system<sup>871</sup> uses a printing technology to print the DPG logo (i.e., the security mark) which cannot be replicated by usual copying facilities. The intent of this printing technology is to create a unique barcode system that helps least minimise fraud<sup>872</sup>.

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*Operators of collection points, processing and recycling facilities are often required to undertake robust data reporting, depending on the assessment method selected as per the legislation, and to retain transparent data records in order to guarantee compliance with all legal requirements*

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In Denmark, the Managing Agency requires eligible containers that are sold in Denmark to be only be marked with an exclusive unique barcode and GTIN<sup>873</sup>. The self-adhesive deposit labels are produced by the Managing Agency and are printed with a special security imprint to prevent copy fraud and to ensure that the correct deposit is marked<sup>874</sup>.

### 13.3.2 Automated Counting

The matter of counting eligible containers is an important design element and one which has considerable influence in ensuring accurate transfer of money and minimisation of fraud. With the help of the scanning of barcodes, automated counting machines such as RVMs are another legal measure used to manage fraud and minimise some of the intentional or unintentional mistakes that come from human errors associated with manual counting. Auditing requirements tend to be more rigorous when applying manual counting methods to ensure that the correct payments are made to collection depots and to the scheme.

Automated counting systems allow collection points to maintain records of the counted eligible containers and the refunds issued, hence ensuring scheme transparency. Additionally, automated container counting, and verification helps to identify fraudulent activity by the below:

- Ensuring that payment is only provided on eligible scheme material;
- Rejecting ineligible containers;
- Rejecting containers that have already been counted and processed;
- Ensuring that the right amount of money is refunded; and
- Automatically saving records that can be used at a later time for auditing.

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*The method of counting eligible containers is an important design element and one which has considerable influence in ensuring accurate data collection, transfer of money and minimisation of fraud.*

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In June 2016 in Canada, a quality control machine was installed in a processing facility that counts one (1) bag of containers in 10-minutes, compared to 45-minutes when counted manually. This contributed to improvements in fraud minimisation and auditing, as it allowed bags to be statistically selected for auditing prior to being picked up, and then audited. This was said to also improved the quality control programme<sup>875</sup>.

As part of the Danish scheme, the law states that if counting is undertaken electronically in RVMs, then a central control unit is required to register data. The registered data must be forwarded electronically from the central control unit to a central server located at the operator with who the Managing Agency has made an agreement. If the Managing Agency is responsible for the counting and registration of

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<sup>870</sup> Review of packaging deposits systems for the UK, 2008

<sup>871</sup> <http://anker-andersen.dk/deposit-laws/germany.aspx>

<sup>872</sup> <http://anker-andersen.dk/deposit-laws/germany.aspx>

<sup>873</sup> Primary marking of one-way packaging, Dansk ReturSystem, 2015

<sup>874</sup> Primary marking of one-way packaging, Dansk ReturSystem, 2015

<sup>875</sup> CM Consulting Inc., 2018, Who Pays What? An Analysis of Beverage Container Collection and Costs in Canada



packaging returned, the counting is to be undertaken electronically by scanning the packaging barcode and deposit code. The following data is to be registered:

- Packaging type;
- Product type (GTIN);
- Deposit group and sales group to which the packaging belongs;
- The recipient of returns who has accepted the packaging in return;
- The provider; and
- The deposit code, if relevant.

If for any reason, the containers cannot be scanned, manual control is to be performed to identify the deposit mark of the item<sup>876</sup>.

### 13.3.3 Crushing of Containers

The use of compaction and crushing of containers has been identified in different schemes as an important anti-fraud measure. Once counted, the crushing of containers can ensure that the unique barcode that identifies the container is destroyed, guaranteeing that that particular container will not be recounted.

A discussion paper, discussing the potential design of a state scheme in Western Australia, identified the importance of RVMs that crush containers after reading individual barcodes, in order to prevent containers being presented a second time for refunds<sup>877</sup>. Even though the method helps minimise fraud, crushing of containers in New South Wales was not applied in the RVMs, but is instead applied once inside the collection trucks or once received at the recycling facilities. According to the Network Operator of the scheme, this choice was made to ensure that RVMs were more affordable for those that wanted to lease them on their sites<sup>878</sup>.

Compaction of containers however is said to complicate auditing processes as individual container counts are not as possible to be undertaken by the MRF (i.e., difficulty to break apart a compacted bale of containers). A weight-based assessment of compacted material provides an alternative auditing process, but for accurate weight measurements the compacted material must be contaminant free. In Canada, it was reported that while compaction is a mature and proven technology, the reluctance to implementation across Canadian schemes was related to audit requirements. Where containers are compacted on a six (6) to one (1) basis or more, it was extremely difficult to audit by recounting the crushed containers<sup>879</sup>.

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*Auditing requirements tend to be more rigorous when applying manual counting methods so to ensure that the correct payments are made to collection depots and to the scheme.*

*Automated counting systems allow collection points to maintain records of the counted eligible containers and the refunds issued, hence ensuring scheme transparency.*

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### 13.3.4 Verification Processes

Verification and inspection processes for eligible containers and scheme participants are identified in detail in many scheme legislative instruments. This helps with ensuring that scheme participants are closely monitored for compliance and that equality is applied between all players. To highlight how verification is applied in the law to manage fraud, examples are provided below. Further detailed

<sup>876</sup> GlobalDenmark Translation, 2017, Statutory Order on Deposits on and the Collection etc. of Packaging for Certain Packages.

<sup>877</sup> Government of Western Australia, Department of Water and Environmental Regulation, 2017, Western Australia - Container Deposit Scheme, Discussion Paper

<sup>878</sup> Direct communication with TOMRA Cleanaway representatives, December 2019.

<sup>879</sup> Meyers Norris Penny 2010. Benchmarking Evaluation of Alberta's Stewardship Program for Recycling Empty Beverage Containers

information is provided in Section 13.4, which discusses the inspections and audits undertaken on scheme participants. Reporting requirements are also discussed in Section 13.5 and Section 16.

In Germany, container packaging can only be introduced to the scheme once the applicant has presented evidence of the compatibility of the packaging with the requirements of the scheme. Evidence is to be submitted in the form of an expert opinion by an independent expert and is to consider consumer behaviour. New applicants are required to provide evidence showing the sales of the product in the previous year. The data is to be broken down by packaging material and certified by an independent expert. The authority, at the applicant's expense, has the rights to perform an inspection of the evidence presented, or have it inspected by a suitable institution.

Further, the law identifies several requirements for continuously monitoring the performance of scheme participants. To ensure that collected containers are being recycled, operators in the scheme are required to submit verifiable evidence of the quantities collected and consigned to hangarua - recycling and to energy recovery. The evidence is to include a verifiable account of the quantities collected in each state. The evidence is to be submitted by 1 May of the following year. The quantities are to be broken down by packaging material. Reports that show compliance with the collection and recovery requirements of the law are to be certified by an independent expert. The law identifies an independent expert as:

- Someone with qualifications that have been ascertained by a member of the German Accreditation Council in a recognised procedure;
- An independent environmental verifier or environmental verification organisation pursuant to the Environmental Audit Act; or
- A person publicly appointed pursuant to the Trade Code<sup>880</sup>.

In Denmark, the Managing Agency undertakes regular inspections of the approved container re-processors to ensure that minimal material collected through the scheme is wasted. Before entering into a contractual partnership with a processor or re-processor, the Managing Agency carries out an assessment of the hangarua - recycling performance, including an assessment of the organisation's certifications and authorisations. Following approval, to provide ongoing compliance and assurance during the contract term, the Managing Agency must receive regular quality reports from contracted re-processors and continue to undertake site visits to the contracted facilities. These strict process assurance methods implemented in the scheme regulatory instruments ensure strict compliance with the scheme requirements.

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*The verification and inspection processes for eligible containers and scheme participants are identified in detail in many scheme regulations. This helps with ensuring that scheme participants are closely monitored for compliance and that equality is applied between all players.*

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In California, a certified processor can seek to dispose of rejected post filled containers if they have a written approval from the State Department. The processor is to submit several documents including a standardised rejection form. The rejected loads of containers are to be available for verification and inspection by the State Department. According to the law, the State Department will also look to see that all possible steps were undertaken to prevent the disposal of the loads<sup>881</sup>.

<sup>880</sup> Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, 2009, Packaging Ordinance, available from: <https://www.bmu.de/en/law/fifth-amending-ordinance-on-the-avoidance-and-recovery-of-packaging-wastes/>

<sup>881</sup> California Department of Resources Recycling and Recovery, 2019, California Beverage Container Recycling & Litter Reduction Act.

### 13.3.5 Record Keeping

Records are most often required to be submitted by scheme participants to ensure transparency of data and allow managing agencies to monitor the operations of the different participants. This information is closely related to the reporting requirements for scheme participants, which is discussed in more detail in Section 13.5 and Section 16.

Operators of collection points, processing and recycling facilities are often required to undertake robust data reporting, depending on the assessment method selected as per the legislation, and to retain transparent data records in order to guarantee compliance with all legal requirements. In New South Wales, the receipt, processing, counting, weighing, storage and delivery of containers from MRFs of the scheme is recorded so that the throughput of this material through the MRF can be tracked and audited at all times.

Written container declarations are often also required to be completed by customers who return several containers over a specified limit. In South Australia, in instances where a depot believes a customer is presenting containers for a refund that were not purchased in South Australia, the operator may request the person to complete a written declaration, and where a customer presents 3,000 or more containers within an 48-hour period, a depot operator is required to request the customer to complete a written declaration for the purpose of claiming a refund<sup>882</sup>. Similarly, in other Australian states, consumers who wish to return over a specific limit of containers are required to complete a declaration form.

In Maine, as a fraud preventative measure, the law requires that a person who brings over 2,500 containers for redemption is to provide their name, address, licence plate number of the vehicle used to transport the containers.

### 13.3.6 Key Performance Indicators and Quotas

The implementation of key performance indicators (KPI) and quotas in scheme legislative instruments helps with ensuring that scheme participants fulfil their legal obligations. In addition to the identification of the quotas, penalties for not achieving the KPIs help to guarantee consistency of obligations.

In Germany, the law outlines the recovery targets that must be met for each packaging material. These are to be guaranteed by the manufacturers and distributors that take part in the scheme. The law identifies the following targets as a minimum, in percent by weight, to be consigned to hangarua - recycling for each year:

- 75% for glass;
- 70% for tinplate;
- 60% for aluminium;
- 70% for paper and cardboard; and
- 60% for composites.

The quotas are verified by the Managing Agency by suitable sampling. If packaging materials do not meet the specific recovery quotas outlined in the law, the management authority has the right to revoke the licence of the packaging material and make the revocation public<sup>883</sup>.

In Oregon, the law identifies quotas that retailers must meet in relation to the number of containers that can be accepted. If retailers display a sign showing the quotas that they must meet, they are

<sup>882</sup> [https://www.epa.sa.gov.au/environmental\\_info/container\\_deposit/faqs](https://www.epa.sa.gov.au/environmental_info/container_deposit/faqs)

<sup>883</sup> Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, 2009, Packaging Ordinance, available from: <https://www.bmu.de/en/law/fifth-amending-ordinance-on-the-avoidance-and-recovery-of-packaging-wastes/>

permitted by law to refuse containers from anyone that brings containers more than the identified number for that store. By law, retailers that are 5,000m<sup>2</sup> or more must accept the following number of containers per person per day on all days and hours that they are opened:

- If not in a redemption centre zone: 144;
- If located in a redemption centre zone but qualifies for an exemption: 144;
- If participates in Zone 1 of a redemption centre: 0;
- If participates in Zone 2 of a redemption centre: 24; and
- If in a redemption centre zone but does not participate: 350.

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*Contractual documents and binding legal agreements between different parties are an important tool for storing records of each party's legal obligations and allowing for enforcement of contractual obligations as agreed between the parties.*

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Retailers less than 5,000m<sup>2</sup> must accept the following number of containers per person per day on all days and hours that they are opened:

- If not in a redemption centre zone: 50; and
- If in Zone 1 or Zone 2 of a redemption centre: 2.

Redemption centres have the following quotas and permissible upper limits for the number of containers per customer per day:

- Fed into an RVM: 350;
- Hand counted by staff: 50;
- Green bags (personal accounts): 15-bags per 90-days; and
- Blue bags (fundraiser accounts): 10-bags per day<sup>884</sup>.

Several Canadian schemes have quotas incorporated in the regulations but do not have penalties for failing to achieve the quotas. Hence a number of these quotas have consistently not been met. In Ontario, the regulation states that a minimum of 40% of soft containers are required to be sold in refillable containers. While this is a legal requirement, the refillable market share of soft drinks is less than 1% since failure to meet the quota is not prosecuted<sup>885</sup>.

### 13.3.7 Contractual Agreements

Contractual documents and binding legal agreements between different parties are an important tool for storing records of each party's legal obligations and allowing for enforcement of contractual obligations as agreed between the parties, especially in situations where disputes between different scheme participants arise. Clear contractual arrangements between the Managing Agency and the scheme's participants provide the ability for the Managing Agency to undertake random audits to ensure that operators meet contractual obligations.

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*The implementation of key performance indicators (KPI) and quotas in regulations helps with ensuring that scheme participants fulfil their legal obligations. In addition to the identification of the quotas, penalties for not achieving the KPIs help to guarantee consistency of obligations.*

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The New South Wales scheme consist of thorough contractual agreements between different parties to ensure that all disputes are handled efficiently, and that scheme participants agree to the authority of the regulators in penalising non-compliance. Some of these documents are identified below:

- The Common Dispute Deed is a contractual agreement between the State Government, the Scheme Coordinator and the Network Operator. An extract from the deed states that "*The intention of this deed is to provide a process for the determination of a Common Dispute arising under one agreement and to bind related parties and the Scheme Coordinator under*

<sup>884</sup> Oregon Liquor Control Commission, 2020, Oregon's Bottle Bill, Frequently Asked Questions, available from: [https://www.oregon.gov/olcc/docs/bottle\\_bill/bottle\\_bill\\_faqs.pdf](https://www.oregon.gov/olcc/docs/bottle_bill/bottle_bill_faqs.pdf)

<sup>885</sup> CM Consulting, 2018, Who Pays What? An Analysis of Beverage Container Collection and Costs in Canada

*other agreements to the determination, without the need to have the dispute determined again and separately under those other agreements".* The document identifies the procedures for the dispute resolution, the referral to expert determination, the expert determination, the involvement of the related scheme participants, the costs of the expert determination, the notice of dissatisfaction, the proceedings, the final and binding decisions, the binding nature of the common dispute and the time requirements for compliances. Schedules in the deed include the rules for the expert determination process and the Accession Deed Poll<sup>886</sup>.

- The Collection Point Side Deed has been created to enable the State Government to carry out an obligation of the network operation if the Network Operator fails to carry out the operation and fails to facilitate the transfer of the arrangements to a replacement Network Operator, to the State or a nominee of the State. If the current Network Operator Agreement expires or is no longer in force, or if the State terminates the Network Operator Agreement, the deed authorises the State to transfer the Collection Point Arrangement to itself, a nominee of the State, or any replacement Network Operator<sup>887</sup>.
- The Supplier Side Deed is a contractual agreement between the State Government, the Scheme Coordinator and a first supplier<sup>888</sup>. The deed allows the State to carry out an obligation, which the Scheme Coordinator was obliged to carry out but failed to carry out within the time required in accordance with the Scheme Coordinator Agreement or the Supplier Arrangement. In the event of termination of the Scheme Coordinator Agreement or as an alternative to the termination of the Supply Arrangement, all parties give effect to the novation of the Supply Arrangement to the State or its nominee<sup>889</sup>.
- The Supply Arrangement is a contractual agreement between the Scheme Coordinator and a first supplier. The document outlines the key obligations of suppliers, a review of the relevant parts of the New South Wales Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation 2017, the requirements for data collection and reporting, the requirements for payments, suspension, termination and disputes<sup>890</sup>. The document authorises suppliers to terminate their agreement if they wish to stop supplying eligible containers in New South Wales by giving the Scheme Coordinator written notice of 20-business days. If an insolvency event occurs in respect of the Scheme Coordinator, and the insolvency event is not remedied by the Scheme Coordinator, the supplier can terminate their agreement with written notice within 10-business days. The Scheme Coordinator can terminate the agreement if an insolvency event occurs in respect of the supplier, if the supplier fails to pay any amount within 20-business days, if the supplier fails to comply with its obligations and fails to remedy the default within 20-business days of being provided written notice of default by the Scheme

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*Clear contractual arrangements between the Managing Agency and the scheme's participants provide the ability for the Managing Agency to undertake random audits to ensure that operators meet contractual obligations.*

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<sup>886</sup> Clayton Utz, year unknown, NSW Container Deposit Scheme, Common Dispute Deed

<sup>887</sup> Return and Earn, year unknown, Summary of the Collection Point Side Deed, available from:

<https://returnandearn.org.au/wp-content/uploads/2018/05/Summary-Collection-Point-Side-Deed-final.pdf>

<sup>888</sup> <https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/waste/container-deposit/17p0287-cds-nsw-first-supply-approach-november-17-fact-sheet.pdf>

<sup>889</sup> Clayton UTZ, year unknown, NSW Container Deposit Scheme: Supplier Side Deed, available from:

<https://returnandearn.org.au/wp-content/uploads/2018/05/Supplier-NSW-CDS-Supplier-Side-Deed-Pro-Forma-for-electronic-signing.pdf>

<sup>890</sup> Clayton UTZ, year unknown, NSW Container Deposit Scheme: Supply Arrangement, available from:

<https://returnandearn.org.au/wp-content/uploads/2018/05/Supplier-NSW-CDS-Supply-Arrangement-Pro-Forma-for-electronic-signing.pdf>

Coordinator and if the supplier contravenes the Act or the Regulation of the scheme<sup>891</sup>.

These contractual agreements between the different parties facilitate an easier system for dispute management and allow different parties to take on the responsibilities of others when non-compliances are undertaken.

In Queensland, MRFs are required by law to enter into a contractual agreement with local councils where the revenue is shared equally from kerbside collected eligible containers that have been processed by the MRFs. This ensures that local councils are not disadvantaged and that both parties receive an equal share of the profit. New South Wales has enforced a sharing arrangement between MRFs and local councils, but has not enforced the 50/50 revenue arrangement, which has been said to have led to some councils receiving an unequal share of profits.

### 13.3.8 Signage

In many schemes, operators have the responsibility to publicly display signage identifying the prohibited activities and the penalties associated with fraud.

Redemption locations in Maine are required under the law to display signage in relation to prohibitions and associated penalties<sup>892</sup>. Similarly, retailers in Michigan are required by law to put signage in the areas where the containers are returned, informing consumers of the penalties associated with fraud<sup>893</sup>. Retailers and redemption centres in New York are also required to put signage at the point of sale information consumers that, among other things, it is illegal to return containers if they were not purchased and the associated penalties<sup>894</sup>.

## 13.4 Audit Processes

In addition to all the previously identified measures, auditing processes are some of the most continuously used and effective measures of ensuring continuous compliance in accordance with contractual agreements. The auditing procedures identified in scheme legislative instruments, and the reasons provided for the auditing of the different global schemes are discussed below.

As discussed previously, the NZ CRS will require robust and transparent audit and compliance processes as well as reporting procedures to identify any potential or actual fraudulent activities. Given the value of scheme finances moving through the NZ CRS, the Managing Agency will require robust processes and procedures to transparently manage scheme participant activities, report on the operation and performance of the scheme and importantly provide the consumer with confidence and assurance that the scheme is being managed appropriately to meet and exceed consumer expectations.

According to COEX, the Managing Agency of Queensland's scheme, the purpose of a robust system audit is:

- To maintain the integrity of the scheme;
- To ensure its financial viability;

<sup>891</sup> Clayton UTZ, year unknown, NSW Container Deposit Scheme: Supply Arrangement, available from: <https://returnandearn.org.au/wp-content/uploads/2018/05/Supplier-NSW-CDS-Supply-Arrangement-Pro-Forma-for-electronic-signing.pdf>

<sup>892</sup> Kristen L. Miller, 2013, Interstate Bottle Redemption Fraud, available from: <https://www.cga.ct.gov/2013/rpt/2013-R-0006.htm>

<sup>893</sup> Kristen L. Miller, 2013, Interstate Bottle Redemption Fraud, available from: <https://www.cga.ct.gov/2013/rpt/2013-R-0006.htm>

<sup>894</sup> Kristen L. Miller, 2013, Interstate Bottle Redemption Fraud, available from: <https://www.cga.ct.gov/2013/rpt/2013-R-0006.htm>

- Oversee kaitiakitanga whakanaonga - product stewardship; and
- Maintain public trust<sup>895</sup>.

### 13.4.1 Audit Requirements for Container Return Facilities

#### 13.4.1.1 Australia

In many schemes, container return facilities must meet strict quality control and audit procedures with some schemes requiring container return facilities to undertake secondary and tertiary counts of collected eligible containers.

In 2018, the Managing Agency of Queensland's scheme, COEX produced an Audit and Risk programme which was guided by an Audit Charter. The programme outlined the authority, scope, reporting and independence requirements. The consulting firm KPMG was contracted as an independent third party to assist the Managing Agency with establishing the procedures for the internal audit. In its first year of operation, safety audits were undertaken at more than 230 collection points. Two (2) sites were identified to require additional support, and the Managing Agency worked with the operators to fulfil their obligations. When audits are undertaken, the results of the audit programme are provided to the COEX General Manager Audit & Risk, who distributes the findings to contract managers to action with their sites. The cycles of reporting following feedback continues until issues are resolved. COEX stated that they were looking to automate their process in the future to prompt scheduled action items, reporting and feedback. If analysis of audit results shows operational contradictions of unethical behaviour, the fraudulent activity is reported to police for further investigation and potential prosecution<sup>896</sup>.

In South Australia, the collected materials delivered to the super collector are audited and verified by the respective super collector to examine for contamination and ensure compliance. Once verified, the collection depots are able to receive the appropriate reimbursement of deposits for containers and a handling fee (i.e., handling fee is paid for the collection service provided by the collection depot).

### 13.4.2 Audit Requirements for Material Processing Facilities

#### 13.4.2.1 Australia

As is the case in general contractual arrangements, the client requiring the service has the ability to carry out random audits of the contractor's activities to ensure these meet contractual obligations. In New South Wales, this option exists for the Scheme Coordinator, which may arrange with the MRF operator to carry out sampling audits at their facility at any time within normal business hours. In the case of New South Wales, the MRF Operator and the Scheme Coordinator have different roles and responsibilities depending on which assessment method is used to determine the eligible container processing refund. Where the MRF Operator implements a weight based assessment of eligible containers, the Scheme Coordinator will arrange for and pay for independent sampling auditors to undertake quarterly facility based sampling in accordance with the sampling strategy with results provided to the New South Wales Environment Protection Authority (EPA) to calculate the state-wide eligible container factor. In comparison, where a MRF operator nominates to the Scheme Coordinator the direct counting of eligible containers to determine the processing refund, the MRF will arrange for and pay for the monthly recounting of a proportion of containers to be carried out in line with the sampling strategy<sup>897</sup>.

If the MRF seeks to alter or change any aspect of the approved assessment methodology, this must first be notified to the Scheme Coordinator and the EPA before any change can be implemented. This is to ensure integrity of the process and auditability of claim information. Alongside requirements for

<sup>895</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>896</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>897</sup> Material Recovery Facility Processing Refund Protocol: Sampling Strategy. November 2017

approval, MRFs must also carry out verification audits of container samples to provide the Scheme Coordinator with assurance that approved sampling protocols are adhered to and processing refund claims are accurate. The Scheme Coordinator may also at times, in addition to verification activities, appoint an appropriately qualified independent assurance team to carry out an assurance audit of the MRF's operations compliance with one or more aspects of the Protocol. The EPA may also carry out an audit or inspection of the MRF at any time to determine compliance.

As part of its Audit and Risk programme, during the first 18 months of the Queensland scheme operation, COEX audited the statements made by every MRF in each quarter.

### 13.4.2.2 United States of America

The law in New York states that the commissioner has the right to make examinations on the conduct of facility inspections, during regular business hours, with respect to the accounts, records or documents required to be maintained under the law<sup>898</sup>.

In California, recycling centres and processing facilities are owned by the same organisation which enables the auditing of the collection of containers to occur once at the recycling centre unless signs of fraud are identified. The law permits the State Department to undertake regular and random inspections of certified recycling centres to determine that the requirements of the law are met. Inspection, whether conducted as part of an audit or an investigation, are to be undertaken during the normal business hours. Facility operators are to provide the State Department with immediate access to the facilities, operations and relevant records. If an operator fails to provide the department with the requested access, the State Department may take disciplinary action to impose penalties and the immediate suspension or termination of any certification or registration held by the operator. The law states that the auditing system adopted by the State Department is to allow for reasonable shrinkage in material due to moisture, dirt and foreign material. After an audit is undertaken by a qualified auditing firm and after a hearing, the State Department is to adopt a standard to be used to account for shrinkage and incorporate the standard in the audit process<sup>899</sup>.

## 13.4.3 Audit Requirements for Producers

### 13.4.3.1 Australia

First suppliers in New South Wales are required to keep auditable electronic records of their supplied beverages<sup>900</sup>, and must report to the Managing Agency on the volume of their beverages by month and by material type<sup>901</sup>. Audit adjustments are made to the market share to be paid by suppliers if any audit finds that the aggregated number of containers supplied has been understated in the supplier statement provided to the Scheme Coordinator. The audit processes support in calculating the first supplier invoice with actual container volumes<sup>902</sup>.

### 13.4.3.2 United States of America

The law in New York states that the commissioner has the right to make examinations of accounts, records or documents relating to the sale of beverage containers by any deposit initiator, bottler, distributor, dealer or redemption centre.

<sup>898</sup> The New York State Senate, 2017, New York State Environmental Conservation Law

<sup>899</sup> California Department of Resources Recycling and Recovery, 2019, California Beverage Container Recycling & Litter Reduction Act.

<sup>900</sup> Exchange for Change, 2017, Newsletter November 2017.

<sup>901</sup> NSW EPA, date unknown, NSW first supply approach.

<sup>902</sup> Return and Earn, 2020, Scheme Payments and Contribution Methodology, available on:

[https://returnandearn.org.au/wp-content/uploads/2018/05/Supplier-Scheme-Payments-and-Contribution-Methodology\\_SPCM-002.pdf](https://returnandearn.org.au/wp-content/uploads/2018/05/Supplier-Scheme-Payments-and-Contribution-Methodology_SPCM-002.pdf)



The law in California allows the State Department to inspect the operations, processes and records of any party required to submit a report to the department, in order to determine the accuracy of the report and compliances with the law. The State Department has the authority to undertake random inspections of the invoices of beverage distributors, or other forms of accounting. If during an audit, the beverage manufacture is found to have underpaid processing fees, the State Department has the right to examine the records concerning sales<sup>903</sup>.

### 13.4.3.3 Europe

According to the law in Germany, by 1 May each year, all distributors of sales packaging are required to submit a declaration of compliance, which has been audited by an accountant, a tax consultant, a registered auditor or an independent expert. Manufacturers and distributors are also required to deposit a declaration of compliance with the local Chamber of Industry and Commerce, for three years. The document is to have a qualified digital signature in accordance with the law. The local Chambers of Industry and Commerce informs the public regularly of the distributors and manufacturers that have submitted the declaration of compliance. Authorities responsible for the control of waste management are able to consult the declarations of compliances<sup>904</sup>.

In Denmark, an auditing company provides the Managing Agency with an overall summary statement of the marketed eligible packaging produced every month, based on information provided to them by the distributors. The auditing company is required to be a state-authorized public accountant of a registered public account, independent of the Managing Agency. The Managing Agency is responsible for informing all operators of the chosen auditing company and the information required to be sent to the company. The auditing company forwards the statement to the Managing Agency for the purpose of the collection of deposits and operating fees. The auditing company will inform the Managing Agency if there are deviations. The Managing Agency can ask the auditing company to request additional information from the distributor. The auditing company will forward the additional information to the Managing Agency to investigate the cause of the deviations. The auditing company can also forward suspected deviations to the Danish Environment Protection Authority (EPA) if procedures are suspected not to be followed. The EPA can request the Managing Agency to terminate the contract with the auditing company if the Board of Directors finds that the agreement is not compatible with the administration in accordance with the regulations of the Statutory Order<sup>905</sup>.

## 13.4.4 Audit Requirements for Exporters

### 13.4.4.1 Australia

The Managing Agency of the New South Wales scheme audits export claims to verify that the information is correct. Similarly, in Queensland, an exporter of eligible containers can claim for an export refund and so, the exporter must have an Export Refund Claim Agreement with the Managing Agency. This allows the Scheme Coordinator to audit and verify the claims<sup>906</sup>.

## 13.5 Reporting Requirements

The requirement for reporting of robust, accurate and consistent information is vitally important to minimise fraud and ensure correct refunds are calculated and issued. Reporting requirements for

<sup>903</sup> California Department of Resources Recycling and Recovery, 2019, California Beverage Container Recycling & Litter Reduction Act.

<sup>904</sup> Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, 2009, Packaging Ordinance, available from: <https://www.bmu.de/en/law/fifth-amending-ordinance-on-the-avoidance-and-recovery-of-packaging-wastes/>

<sup>905</sup> GlobalDenmark Translation, 2017, Statutory Order on Deposits on and the Collection etc. of Packaging for Certain Packages.

<sup>906</sup> Container Exchange, date unknown, Beverage manufacturers, available from: <https://www.containerexchange.com.au/industry-partners/>

schemes are discussed in more detail in Section 16 however this section will show how reporting has been used as a tool for fraud reduction.

Reporting of key NZ CRS performance data will aid in:

- Keeping scheme participants accountable;
- Tracking financial flows of the scheme;
- Tracking the quotas and operational performances of the participants;
- Providing transparency to the scheme; and
- Highlighting areas of improvement.

In addition to the previously mentioned information that operators are required to submit as part of their obligations, some further examples are provided below.

### 13.5.1 Reporting Requirements for Scheme Operators

#### 13.5.1.1 Australia

As part of the participation in the New South Wales scheme, several legal documents must be completed by suppliers on a regular basis. To support with understanding financial and reporting obligations, a legal document titled 'Scheme Payments and Contribution Methodology'<sup>907</sup> has been created. The document describes items such as the below:

- The methodology for calculating fees to be paid as part of the scheme;
- How and what fees are paid to different parties;
- How penalties are paid;
- The role of auditing in assessing market share fees; and
- The process to be undertaken when there are payment disputes.

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*The requirement for reporting of robust, accurate and consistent information is vitally important to minimise fraud and ensure correct refunds are calculated and issued.*

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Suppliers must also complete a Statutory Declaration every year, identifying the number of beverage containers supplied in the previous financial year. The data is categorised by material type. The declaration is to be signed in the presence of an authorised witness<sup>908</sup>.

#### 13.5.1.2 United States of America

The Michigan scheme does not publicly release reporting information and the State Government has stated that the existing amount of fraud that may be undertaken is unknown. The State Department states that to find information on producers', wholesalers', and retailers' financial obligations regarding reporting, the Treasury should be contacted<sup>909</sup>.

In New York, reporting is more explicitly addressed in the law, enabling the state to have consistent and transparent monitoring over fraudulent activity. The law states that deposit initiators are required to file quarterly reports with the commissioner in the manner prescribed by the commissioner. Each report is to include the information that the commissioner determines to be appropriate, including but not limited to all the financial flows of the previous quarter. A deposit initiator who intends to stop participating in the scheme and cease selling eligible containers must submit a final report to the state. The applicant is also required to remit payment of 80% of all the amounts remaining in the refund value

<sup>907</sup> Return and Earn, 2020, Scheme Payments and Contribution Methodology, available on:

[https://returnandearn.org.au/wp-content/uploads/2018/05/Supplier-Scheme-Payments-and-Contribution-Methodology\\_SPCM-002.pdf](https://returnandearn.org.au/wp-content/uploads/2018/05/Supplier-Scheme-Payments-and-Contribution-Methodology_SPCM-002.pdf)

<sup>908</sup> Return and Earn, year unknown, New South Wales Statutory Declaration, available from:

<https://returnandearn.org.au/wp-content/uploads/2018/05/NSW-Annual-Statutory-Declaration-Blank-Version.pdf>

<sup>909</sup> Department of Natural Resources and Environment, 2010, Michigan Bottle Deposit Law Frequently Asked Questions, available from [https://www.michigan.gov/documents/deq/dnre-whmd-sw-mibottledepositlawFAQ\\_318289\\_7.pdf](https://www.michigan.gov/documents/deq/dnre-whmd-sw-mibottledepositlawFAQ_318289_7.pdf)

account as of the close of the last day of business. The requirements of the final report are outlined in the law, including the fact that it should be labelled as the "final report". By law, documents that are to be submitted as part of the law must be maintained for three (3) years, unless the commissioner has allowed for their destruction during that time<sup>910</sup>. The prohibition of destruction ensures that the previous work of deposit initiators can still be inspected for fraud, even after they have stopped participating in the scheme.

### 13.5.1.3 Europe

To ensure that the Key Performance Indicators (KPIs) are met, the law for the German scheme states that the Federal Government will conduct yearly surveys and publish the results annually in the Federal Gazette. The law states that the Federal Government will undertake the necessary surveys to inform the general public and the economic operators and to keep track of the recovery rates for each material<sup>911</sup>.

*Some schemes have identified that in addition to auditing the information produced by scheme operators, it is important to audit the information released by the Managing Agency.*

When a provider registers a packaging product in the Danish scheme, the Managing Agency of the scheme decides on a format required for the reporting of the marketed packaging. This format is binding for the calendar year. If an operator sends data other than what is required by the Managing Agency, the agency can immediately terminate the agreement with the operator. Once a year, no later than 1 March, producers must report to the Managing Agency on the total number of items marketed in the past calendar year, so that the Managing Agency can calculate the total return rate of refillables in the past year.

Additionally, every month, producers are to give the following information to the auditing company:

- Name, address and customer number of each store to which the packaging material has been marketed;
- The number of single-use packaging items marketed to each store, broken down by product type; and
- The number of single-use packaging items exported with a deposit mark, broken down by sales group.

## 13.5.2 Transparent Reporting of the Managing Agency

Some schemes have identified that in addition to auditing the information produced by scheme operators, it is important to audit the information released by the Managing Agency. This is the case in Denmark. As mentioned in Section 13.3.2, the Managing Agency can be responsible for undertaking the recording of the electronically scanned returned containers. The Managing Agency is required to forward the registered data to a central server at the operator with who the Managing Agency has entered into an agreement with. Once the information is sent, the Managing Agency is required to delete the data. The Managing Agency cannot copy, store or make the information available<sup>912</sup>. Financial data is not assessed by the Managing Agency but by an independent accounting firm, which provides the Managing Agency with summary reports. This is to ensure the protection of the commercial information of all beverage producers, since the Managing Agency includes representatives from a large beverage producer<sup>913</sup>.

<sup>910</sup> The New York State Senate, 2017, New York State Environmental Conservation Law

<sup>911</sup> Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, 2009, Packaging Ordinance, available from: <https://www.bmu.de/en/law/fifth-amending-ordinance-on-the-avoidance-and-recovery-of-packaging-wastes/>

<sup>912</sup> GlobalDenmark Translation, 2017, Statutory Order on Deposits on and the Collection etc. of Packaging for Certain Packages.

<sup>913</sup> Martin Stewardship & Management Strategies Pty Ltd, 2011, Preliminary Report - Best Practice International Packaging Approaches.

Similarly, to ensure scheme transparency in Norway, financial flows that are publicly reported in the Managing Agency's annual report, are annually and independently verified<sup>914</sup>. In British Columbia in Canada, the Managing Agency, publishes financial statements prepared in accordance with the standard Canadian accounting principles. Independent auditors undertake annual audits and verifications of the financial statements. Material and financial flows are tracked and made transparent<sup>915</sup>.

As part of the California scheme, the State Department responsible for managing the scheme, is also required to submit documents to the Legislature. The law outlines that the department is required to provide the below information, at a minimum once every three (3) months:

- A funds condition statement showing revenues, transfer and expenditures;
- The recycling rate of each container material type;
- An explanation of significant changes to the fund condition statement from the previous report;
- An explanation of any significant changes to the methodology used for forecasting the fund condition statement;
- Projected sales that includes all actual data available since the last reporting period by beverage container material type and size;
- Project handling fee payments;
- Projected processing payments; and
- Total grants awards<sup>916</sup>.

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*The roles and responsibilities of all scheme participants must be clearly outlined in the regulations to ensure that fairness is upheld consistently during the scheme, and that all scheme participants are clearly aware of their legal obligations*

*Where an enforcement body does not retain oversight and/or control of the logistics companies and other scheme operators, the scheme risks increased fraudulent activities due to lack of data transparency*

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## 13.6 Roles and Responsibility

The roles and responsibilities of all scheme participants in the NZ CRS must be clearly outlined in the bespoke NZ CRS legislative instrument to ensure that fairness is upheld consistently during the scheme, and that all scheme participants are clearly aware of their legal obligations.

Where an enforcement body (e.g., Managing Agency) does not retain oversight and/or control of the logistics companies and other scheme operators, the scheme risks increased fraudulent activities due to lack of data transparency. As part of the NZ CRS design, a monitoring or enforcement body is required to ensure that the roles and responsibilities, as outlined by the legislative instrument, are complied with and to make sure that fraudulent behaviour is not undertaken. This role often falls on the regulatory government body or the Managing Agency, depending on the design of the scheme. In Queensland, Australia, monitoring of the scheme and auditing is undertaken by the Managing Agency, whereas in California in the United States of America, and the Northwest Territories<sup>917</sup> in Canada, the government department is responsible for the monitoring and auditing of the scheme. In California, it is the responsibility of the State Department to establish procedures to protect the privileged, confidential, commercial or financial information obtained while collecting information for carrying out the requirements of the regulation.

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*It is often preferred that scheme regulation is undertaken by the government department to ensure that the full range of players in the scheme are protected equally*

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<sup>914</sup> Martin Stewardship & Management Strategies Pty Ltd, 2011, Preliminary Report - Best Practice International Packaging Approaches.

<sup>915</sup> Martin Stewardship & Management Strategies Pty Ltd, 2011, Preliminary Report - Best Practice International Packaging Approaches.

<sup>916</sup> California Department of Resources Recycling and Recovery, 2019, California Beverage Container Recycling & Litter Reduction Act.

<sup>917</sup> CM Consulting Inc., 2018, Deposit Systems for One-Way Beverage Containers: Global Overview

In some schemes, a Managing Agency manages the scheme, while the government department supervises compliances and audits the participants. This is undertaken in Denmark and New South Wales where the Environment Protection Authority (EPA) of that country or state is the scheme regulator<sup>918</sup>. In New South Wales, the government department, the New South Wales EPA is the compliance regulator. If operators have complaints about other operators who they believe not to be fulfilling their legal obligations, they are directed to the contact details for the New South Wales EPA.

Scheme regulation is often undertaken by the government department to ensure that the full range of players in the scheme are protected equally<sup>919</sup>. In many situations where the Managing Agency is separate to the government department, it was not explicit in the legislative instruments how the Managing Agency is penalised for non-compliant behaviour.

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*The role of scheme governance is imperative in ensuring that the scheme is operating as it was designed to do, that all participants are undertaking their contractual obligations, and that the scheme remains fair to all participants.*

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### 13.7 Scheme Governance Board

The responsibility for scheme governance falls on different parties depending on the model and design chosen of the scheme. In most situations, the role of governance falls to either the State Government or the Scheme Coordinator.

The role of scheme governance in the NZ CRS is imperative in ensuring that the scheme is operating as it was designed to do, that all participants are undertaking their contractual obligations, and that the scheme remains fair to all participants. An appropriate scheme governance responsibility framework needs to enable penalties for any fraudulent activities and failure to meet performance targets as required for the scheme. The NZ CRS scheme Governance Board is discussed in more detail in Section 15.

In Queensland, the obligations of Container Exchange (COEX), as the party responsible for establishing and running the scheme, is outlined in the regulation for the scheme. Under the regulation for the scheme, COEX is identified as the Product Responsibility Organisation (PRO). The law outlines the items that are required to identify an organisation as an eligible PRO. The role of managing the scheme and governing the operations of other participants, such as collection point operators, is mostly undertaken by PRO. Under certain circumstances, the law states that the State Government has the authority to suspend or cancel the appointment of the PRO. These include:

- a) *“the company is no longer an eligible company;*
- b) *an executive officer of the company is no longer an eligible individual;*
- c) *the company is no longer suitable for appointment as the Organisation;*
- d) *the company as the Organisation has contravened a provision of this Act;*
- e) *the company has contravened a condition of its appointment as the Organisation;*
- f) *the company as the Organisation has failed to comply with a direction of the Minister under section 102ZE;*
- g) *the company as the Organisation has failed to achieve, and is unlikely to achieve, an outcome prescribed under section 102ZF during a particular period;*
- h) *the company as the Organisation has contravened a compliance notice given to the company under chapter 11;*

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<sup>918</sup> GlobalDenmark Translation, 2017, Statutory Order on Deposits on and the Collection etc. of Packaging for Certain Packages.

<sup>919</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK

- i) *the company was appointed as the Organisation because of a materially false or misleading representation or declaration.*<sup>920</sup>

While the Western Australian scheme design is similar to Queensland's, the Western Australian Government has taken a different approach to governing the scheme and has given the State Government greater authority in monitoring the Scheme Coordinator. Unlike Queensland, where the chosen organisation can operate as the PRO for an indefinite period, unless terminated by the State Government for incompliance, the Western Australian Government will review the organisation acting as the Scheme Coordinator every seven (7) years. This ensures that the Scheme Coordinator is incentivised to perform well for the duration of the seven (7) years to keep their position as Scheme Coordinator. If the Scheme Coordinator doesn't achieve the performance targets outlined in the regulations, the State Government has the authority to change the organisation that operates as the Scheme Coordinator.

Additionally, the Western Australian Government has ensured that they have a continuous role in governing the design of the scheme by outlining rigorous requirements in the legislation. This takes the responsibility of some elements of design away from the Scheme Coordinator and ensures that the State Government's intentions for the scheme are met. Under the regulation, performance requirements for the Scheme Coordinator are outlined, including the performance in relation to refund points, to hangarua - recycling, and to verification and hangarua - recycling. If the Scheme Coordinator does not achieve the container recovery rate target of at least 85% by the financial year starting on 1 July 2022, and each later financial year, the Scheme Coordinator will receive a civil penalty of \$25,000. This penalty applies to the other annual performance targets as well. The State Government has given the Scheme Coordinator leeway, by decreasing the target for collection points for the first few months of operation. After one (1) year of operation, the target for the collection points must be met. This was done to recognise that the first few months of operation will require some changes based on operational learnings<sup>921</sup>.

Additionally, the Western Australian scheme has improved on the Queensland model by enforcing rigorous reporting requirements for the Scheme Coordinator. This allows for the provision of greater transparency of data from the Scheme Coordinator. Under the regulation, the Scheme Coordinator is required to report monthly, quarterly, and annually, and is required to report publicly on the scheme's website. The reporting code is available on the State Government's website<sup>922</sup>.

In New South Wales, the scheme is designed so that the Network Operator, responsible for running the network and managing collection point operators, and the Scheme Coordinator, responsible for the financial flows and managing beverage producers, are both governed through separate contracts by the State Government. The contractual agreements between the State Government and the parties governed by the State Government are discussed in Section 13.3.7.

## 13.8 The Aotearoa New Zealand Context

As discussed previously, there is growing recognition that the current process by which we manage our waste cannot continue via a linear (take-make-dispose) process. There is also awareness and recognition that the economy must transition from a linear (take-make-dispose) economy to a circular (make-use-return) economy<sup>923</sup>. Recent international market changes including restrictions by China on the importation on waste and recyclables and the recent COVID-19 global health pandemic has highlighted

<sup>920</sup> The Government of Queensland, 2017, Waste Reduction and Recycling Amendment Act 2017

<sup>921</sup> The Government of Western Australia, Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulations 2019, available from: <https://www.dwer.wa.gov.au/cds/information>

<sup>922</sup> The Government of Western Australia, Department of Water and Environmental Regulation, 2019, Reporting Code: Reporting requirements for the Coordinator, Container deposit scheme, available from: [https://dwer.wa.gov.au/sites/default/files/Reporting\\_Code.pdf](https://dwer.wa.gov.au/sites/default/files/Reporting_Code.pdf)

<sup>923</sup> <https://www.mfe.govt.nz/waste/circular-economy>

the need to take a closer look at the way Aotearoa New Zealand manages its waste, including current onshore processing and hangarua - recycling (e.g., General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020). It is not the intent for this section to restate the Aotearoa New Zealand legislative framework that may enable and support the implementation of a NZ CRS design and establishment of a bespoke NZ CRS legislative instrument and so the reader is referred to Section 13.1 for further discussion.

The outcomes of the research and feedback received from the Scheme Design Working Group (SDWG) acknowledged the need to establish a bespoke NZ CRS legislative instrument to provide clearly defined scheme specific conditions, including but not limited to:

- Scheme licensing and registration requirements (e.g. registration of container return facilities, eligible scheme containers);
- Definitions of scheme participants, including roles and responsibilities;
- Eligible scheme container labelling requirements;
- Import requirements (e.g., NZ CRS eligible container labelling requirements);
- Authority to apply and administer the NZ CRS fee including the deposit, scheme fees, Advanced Material Recycling Fee and Environmental/Eco-Fee;
- A minimum eligible container return rate target of 85%;
- An aspirational eligible container return rate target of 95%;
- Specifying the number of container return facilities;
- The structure and function of the Managing Agency and scheme Governance Board;
- The role and responsibility of the Managing Agency and scheme Governance Board;
- The requirement that the bespoke NZ CRS legislative instrument will align with and uphold the principles of Te Tiriti o Waitangi – The Treaty of Waitangi;
- Managing Agency and scheme Governance Board accountability requirements;
- Eligible container conditions of acceptance, including labelling;
- Reporting requirements;
- Conditions regarding the use of any unredeemed deposits; and
- Scheme review periods to assess, for example, scheme performance and deposit level.

It is also acknowledged that a detailed legal assessment will be required during the NZ CRS implementation stage to ensure that all legal components have been addressed and accounted for in the bespoke NZ CRS legislative instruments to support the implementation of the NZ CRS and the ultimate success of the scheme.

### 13.9 Summary of Key Findings

The outcomes of the above research show that the majority of global container return schemes are supported by a specific set of legislative instruments to enable schemes to, for example, operate at maximum efficiency, protect the scheme against fraud and ensure scheme participants have clarity and transparency on their respective roles and responsibilities in delivering the scheme to consumers. To achieve this, scheme regulations commonly include specific operational and performance measures such as conditions of acceptance criteria, container return rate targets, forms of refunds, financial management and registration, recording and reporting requirements, all of which assist the Managing Agency and scheme Governance Board to track scheme operations, performance and minimise fraudulent activities.

Management of scheme finances has been highlighted in the research as a key scheme component that requires clear controls to be established through, for example, financial management platforms ensuring full transparency of scheme costs to all scheme participants, including Government. Ensuring clarity and transparency of scheme finances is a critical component for the NZ CRS to ensure both full

scheme transparency and provide a safeguard to scheme participants where confidential and/or commercially sensitive information is provided to the Managing Agency which may have competitor membership.

Further, the establishment of scheme legislative instruments are commonly supported within an existing legislative framework which provides the basis for the establishment of a container return scheme legislative instrument. In the Aotearoa New Zealand context, the Waste Minimisation Act 2008, the New Zealand Waste Strategy, the Local Government Act 2002 and the Resource Management Act 1991 provide the foundation documents on which a bespoke NZ CRS legislative instrument can be established so as to ensure the success of the NZ CRS design. These pieces of legislation also ensure that those exercising functions under these acts take into account Te Tiriti o Waitangi principles, give due consideration to tikanga Māori and facilitate participation by Māori. In addition to the three primary legislative Acts, the NZ CRS design is also influenced by several other national legislative documents (e.g., Litter Act 1979, Climate Change Response Act 2002) and international agreements (e.g., Montreal Protocol, Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal ) which will require detailed assessment and review during the implementation stage to ensure all relevant aspects are reviewed and accounted for in the scheme design.

Taking the above research into consideration, the following legal framework conclusions can be drawn:

- Robust regulatory guidance is at the centre of a successful container return scheme. Most existing schemes are implemented through legislation or regulations that allow for a continuously successful operation, including (Section 13):
  - The schemes is operated at maximum efficiency;
  - The scheme is protected against fraud; and
  - Clear and well-defined obligations and processes are understood by all participants.
- Most container return scheme legislation or regulations address common items of the schemes' design, including (Section 13):
  - The conditions of acceptance for eligible containers;
  - The requirements for the collection points and container return facilities;
  - The accepted counting methods;
  - The forms of refunds that can be provided;
  - The amounts of deposits and refunds;
  - Signage and scheme awareness requirements;
  - Legal obligations of all participants;
  - Registration, recording and reporting requirements;
  - Application of environmental taxes (e.g., Norway);
  - Resource recovery performance indicators; and
  - Prohibited activities and penalties.
- Recent international market changes including restrictions by China on the importation of waste and recyclables has highlighted the need to take a closer look at the way Aotearoa New Zealand manages its waste, including current onshore processing and hangarua - recycling (Section 13.1);
- An important instrument of legislation is that it provides for appropriate anti-fraud measures as fraudulent activity leads to short-changing and money leaving the scheme, damaging the ōhanga āmiomio - circular economy created by the scheme, and leaving the country's recycling economy (Section 13.2);
- The types of fraud undertaken can be categorised by two primary activities, fraud undertaken for illegal economic profit and fraud undertaken to avoid the fulfilment of legal obligations, for example, (Section 13.2):



- Photocopying or production of fake barcodes, labels and deposit vouchers to generate fake eligible containers under the scheme;
- Manufacture of fake containers for refund redemption;
- Retailers and/or processors trying to claim extra handling fees;
- Customer or shop staff feeding containers through twice; and
- Container collectors feeding containers through RVMs twice.
- Similar to penalties being applied for attempts to make an income by cheating the scheme, penalties are also included in legislation or regulations for failing to fulfil the legal obligations for different parties under the scheme (Section 13.3);
- Penalties are one of several measures for discouraging fraud and encouraging compliance with the law. Besides the clear identification of contractual obligations of all involved parties, the violations and the penalties for non-compliance, a number of other measures are identified in the legislation or regulations of existing schemes in order to manage and minimise fraudulent activity, including (Section 13.3):
  - Barcodes and specific scheme marking;
  - Automated counting;
  - Crushing of containers;
  - Verification processes;
  - Record keeping;
  - Key performance indicators and quotas;
  - Contractual agreements; and
  - Signage.
- Auditing processes are some of the most continuously used and effective measures of ensuring continuous compliance in accordance with contractual agreements, to achieve, for example, the following (Section 13.4):
  - To maintain the integrity of the scheme;
  - To ensure its financial viability;
  - Oversee kaitiakitanga whakanaonga - product stewardship; and
  - Maintain public trust.
- In many schemes, container return facilities must meet strict quality control and audit procedures with some schemes requiring container return facilities to undertake secondary and tertiary counts of collected eligible containers (Section 13.4);
- In many schemes, producers are required to keep auditable electronic records of their supplied beverages and report to the Managing Agency on the volume of their beverages by month and by material type (Section 13.4 and Section 13.5);
- Auditing of export funds is commonly managed via Export Refund Claim Agreements and carried out by the Managing Agency (Section 13.4 and Section 13.5);
- The requirement for reporting of robust, accurate and consistent key performance data is vitally important to minimise fraud and ensure correct refunds are calculated and issued, for example, (Section 13.5):
  - Keeping scheme participants accountable;
  - Tracking financial flows of the scheme;
  - Tracking the quotas and operational performances of the participants;
  - Providing transparency to the scheme; and
  - Highlighting areas of improvement.
- In addition to auditing the information produced by scheme operators, it is important to audit the information released by the Managing Agency, such as engaging an independent financial accounting firm to assess scheme financial data thereby ensuring protection of the commercial

information of all beverage producers since the Managing Agency commonly includes representatives from beverage producers (Section 13.5);

- To ensure scheme transparency, many Managing Agencies are required through legislation to publish publicly available annual reports including financial statements that are independently verified and provide scheme reports to the government (Section 13.5 and Section 13.6);
- The roles and responsibilities of all scheme participants must be clearly outlined in the legislation or regulations to ensure that fairness is upheld consistently during the scheme, and that all scheme participants are clearly aware of their legal obligations (Section 13.6);
- As part of the scheme’s design, a monitoring or enforcement body (e.g. the Managing Agency) is required to ensure that the roles and responsibilities, as outlined by the legislation or regulation, are complied with and to make sure that fraudulent behaviour is not undertaken (Section 13.6);
- In some schemes, it is the responsibility of the government department to establish procedures to protect the privileged, confidential, commercial or financial information obtained while collecting information for carrying out the requirements of the legislation or regulation. In other schemes, a Managing Agency manages the scheme, while the government department supervises compliances and audits the participants (Section 13.6);
- It is often preferred that scheme regulation is undertaken by the government department to ensure that the full range of players in the scheme are protected equally (Section 13.6); and
- The role of scheme governance is imperative in ensuring that the scheme is operating as it was designed to do, that all participants are undertaking their contractual obligations, and that the scheme remains fair to all participants. With appropriate scheme governance responsibilities, the government is able to penalise any fraudulent activities and failure to meet performance targets as required for the scheme (Section 13.7).

Based on the above research conclusions, Section 13.10 below provides a synthesis of this information in the form of the specific legal framework components to be included in the NZ CRS design.

### 13.10 Summary of Design Feedback Received

The following table provides a high-level summary of the feedback received from the Scheme Design Working Group (SDWG) members after reviewing the section information. As many suggestions as possible have been incorporated but the NZ CRS Project Team acknowledge that the wide range of views expressed meant not every edit could be accepted. The NZ CRS Project Team is grateful for those who have provided feedback and where possible these have been used to provide further clarity and context throughout this section and to identify areas requiring further assessment during the NZ CRS implementation stage (Section 17).

Legal Framework Feedback – High-Level Summary	
<b>Do not Support the Following</b>	
The idea that regulation by government is the only way to achieve equal protection for all scheme parties. This can still be done by the managing agency or through other methods.	
<b>Support the Following</b>	
Robust legal framework where all parties have a role.	Funding to be made available to non-industry stakeholders.

Legal Framework Feedback – High-Level Summary	
The law to apply strong deterrents and penalties for fraud.	Reporting of beverages to be managed between producers and the Managing Agency, rather than retailers and the Managing Agency.
The Governance Board to be given full powers, while having oversight from the Manatū Mō Te Taiao – The Ministry for the Environment.	Regular reporting rather than monthly reporting depending on the data to be reported.
<b>Additional Design Considerations</b>	
NZ CRS to catalyse a review of the circular zero waste economy principles and legislation.	

### 13.11 Component(s) to be Included in the New Zealand Container Return Scheme Design

Taking the above key findings into account including feedback from stakeholders involved in the NZ CRS design, the Project Team are of the view that the following legal components will be included in the NZ CRS design:

- Notwithstanding the mechanisms of the existing Waste Minimisation Act 2008, new CRS specific legislative instruments will be required to enable the NZ CRS design and its goals to be fully realised.
  - The reason why this is good for Aotearoa New Zealand is that the establishment of bespoke NZ CRS legislative instruments that are ‘fit-for-purpose’ will enable the benefits of the scheme to be fully realised.
- The NZ CRS is a mandatory kaitiakitanga whakanaonga - product stewardship scheme that is designed and implemented to assist the Aotearoa New Zealand economy transition from a linear to ōhanga āmiomio - circular (make-use-return) economy.
  - The reason why this is good for Aotearoa New Zealand is that it will (i.e., acknowledging scheme design and associated guidelines) require everyone including the producer, brand owner, importer, retailer and consumer to take responsibility for beverage containers and their impact on the taiao - environment.
- Appropriate anti-fraud measures including, for example, contractual obligations, auditing and verification and reporting to closely monitor and assess participants involved in the performance of the scheme.
  - The benefit of this approach is primarily driven by the Managing Agency’s ability to track registered scheme containers and participants to minimise scheme fraud and maximise scheme compliance.
- Fraud mitigation measures, including but not limited to, a specific scheme logo and other emerging technologies (e.g., data dots, block chain) applied in a way so as to further minimise fraud.
  - The benefit of this approach is primarily driven by the Managing Agency’s ability to track registered scheme containers and participants to minimise scheme fraud.

- Fraud mitigation measures such as a cap on the number of eligible scheme containers returned at any point in time by non-scheme registered individuals.
  - The benefit of this approach is to ensure that all scheme participants involved in the bulk collection of eligible scheme containers are registered within the scheme so that the scheme Managing Agency can manage, monitor and track collection activities and the numbers of containers being returned and deposits refunded through the scheme. Additionally, capping the number of eligible containers returned at any point in time influences tax avoidance by non-scheme registered individuals. The cap will be set at 1,500 containers in alignment with the New South Wales, Queensland and Northern Territory container return schemes in Australia and subject to any specific Aotearoa New Zealand tax laws and scheme measures such as fraud mitigation and reporting requirements. Additionally, the option to include additional container cap numbers for specific container return facilities, for example, retail, will be considered during the NZ CRS implementation stage.
- Determine the maximum container return amount to be considered across the three envisaged return point scenarios (Manual Depot, Automated Depot and Return to Retail) with an emphasis on striking a balance between container return efficiency and impact on existing business activities, particularly when considering return to retail points. It may be the case that return to retail points will require site by site consideration to ensure that retail activities are not unduly disrupted by container return activities particularly when the return point is inside the retail operation, for example, inside a supermarket.
  - The benefit of this approach to the NZ CRS is ensuring that container return facilities are not unduly disrupted by container return activities.
- A separate financial accounting system and Information and Communications Technology (ICT) platform to manage scheme costs.
  - The benefit of this approach for a NZ CRS is to enable the Managing Agency to have complete monitoring transparency and data visibility as they relate to the successful functioning and performance of the scheme both operationally and financially.
- Revenue generated by the sale of eligible scheme material to be passed on via the Advanced Material Recycling Fee to beverage producers to reflect the choice of container materials used.
  - The reason why this is good for Aotearoa New Zealand is that the Managing Agency is in the best position to manage the risk and promote the beneficial use of material over the long term. This is beneficial for the Aotearoa New Zealand taiao - environment as it will encourage the whakamahi anō - reuse of scheme materials with a priority focus on Aotearoa New Zealand based manufacturers.
- Reporting of key scheme performance data including but not limited to monthly rolling average data of scheme performance (operational, fiscal, health and safety, customer satisfaction) and container return rate targets, or other reporting time period to align with, for example, contractual key performance indicator measures.
  - The benefit of this requirement to Aotearoa New Zealand is to ensure the Managing Agency provides clear and transparent information on the efficiency and performance of the scheme whilst highlighting areas of improvement.
- Implementation of regulated scheme review periods comprising of two (2) initial scheme review periods to assess scheme performance and operation (e.g., eligible scheme container return rates, consumer accessibility) and strategic direction set at the end of the year-3 and year-5 financial periods, then every 5-years thereafter.
  - The benefit of two (2) interim scheme review periods is to enable sufficient time for the scheme to build towards optimal performance and enable the Managing Agency to assess the schemes performance, including, for example, the interim annual container

return rate targets and the accessibility of a consumer focussed network of container return facilities.

- Inclusion of regulated incentives for all scheme participants that do not comply with or meet the requirements of the bespoke NZ CRS legislative instrument.
  - The benefit of this requirements is to ensure all scheme participants (including the Managing Agency) are held accountable to ensuring the ultimate success of the NZ CRS.
- Inclusion of the regulatory powers required to be in place that underpins and ensures the successful delivery and enforcement of the CRS.
  - The reason why this is good for Aotearoa New Zealand is that the establishment of bespoke NZ CRS legislative instruments that are 'fit-for-purpose' will enable the benefits of the scheme to be fully realised.



SECTION 14:  
SCHEME MANAGING AGENCY  
ORGANISATIONAL FORM

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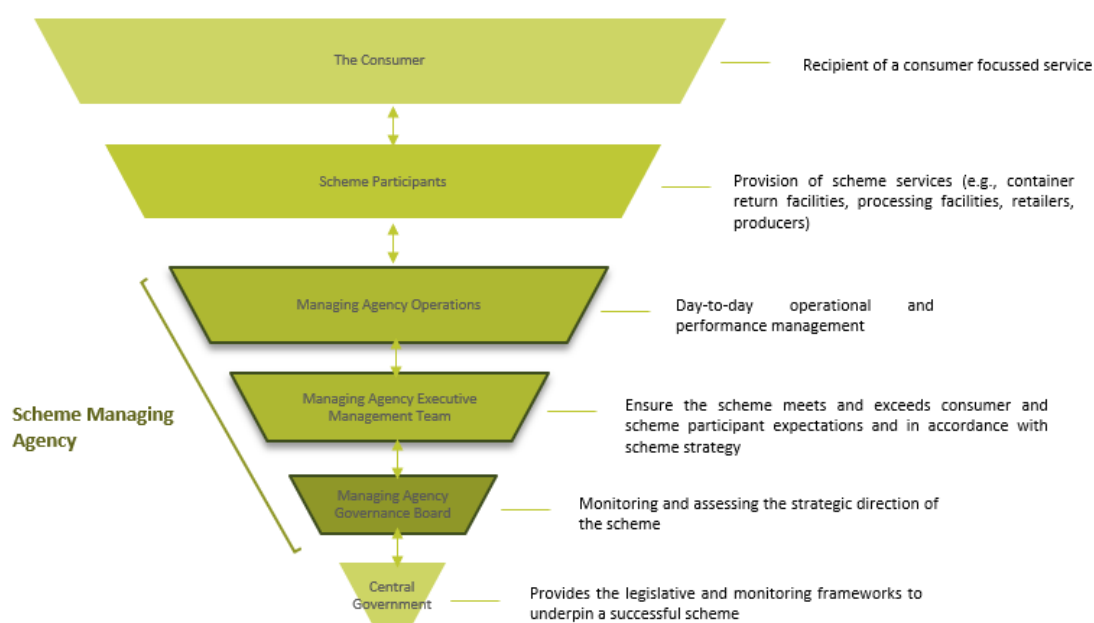
## Section 14 Scheme Managing Agency Organisational Form

This section discusses the roles, responsibilities and considerations related to the establishment of the NZ CRS Managing Agency. For clarity the NZ CRS Managing Agency is the central organisation responsible for the operation, performance and strategic direction of the scheme, and broadly includes three (3) main components:

1. an Operational Team responsible for the day-to-day services including, for example, implementing scheme processes and procedures, provide customer care and interface, co-ordinate provision of container return facilities across the regions;
2. an Executive Management Team responsible for the day-to-day operation and performance management of the scheme as well as ensuring the scheme meets the requirements of any legislative and strategic frameworks; and
3. a Governance Board responsible for ensuring the scheme meets and exceeds consumer and scheme participant expectations in accordance with the legislative and strategic frameworks. The Governance Board is ultimately responsible for the success of the NZ CRS and is accountable to the relevant New Zealand central government department that is responsible for the scheme on behalf of all New Zealanders.

Underpinning the Managing Agency is commonly the central government department responsible for establishing the legislative and monitoring frameworks that support the success of the scheme. These frameworks commonly set the foundation scheme objectives and requirements that the Managing Agency uses to establish measurable and deliverable scheme processes and procedures to support the scheme participants (e.g., container return facilities, Material Consolidation Facility, retailers, producers). This ensures the Managing Agency establishes a scheme that can deliver on the scheme requirements (e.g., container return rates, conveniently located container return facilities) and be responsible for the operation and performance of the scheme.

Figure 51 below illustrates the broad structure of the Managing Agency comprising the Governance Board, the Executive Management Team and the Operations Team, and the Agency's relationship with the scheme participants (e.g., container return facilities, Material Consolidation Facility, retailers, producers), the scheme regulator (i.e., the government department responsible for the scheme) and ultimately the consumer. However, it is important to note here that variations of the below illustrated Managing Agency may apply throughout the global container return schemes.



**Figure 51: Schematic illustrating the broad relationships between the scheme Managing Agency, central government, scheme participants and the consumer**

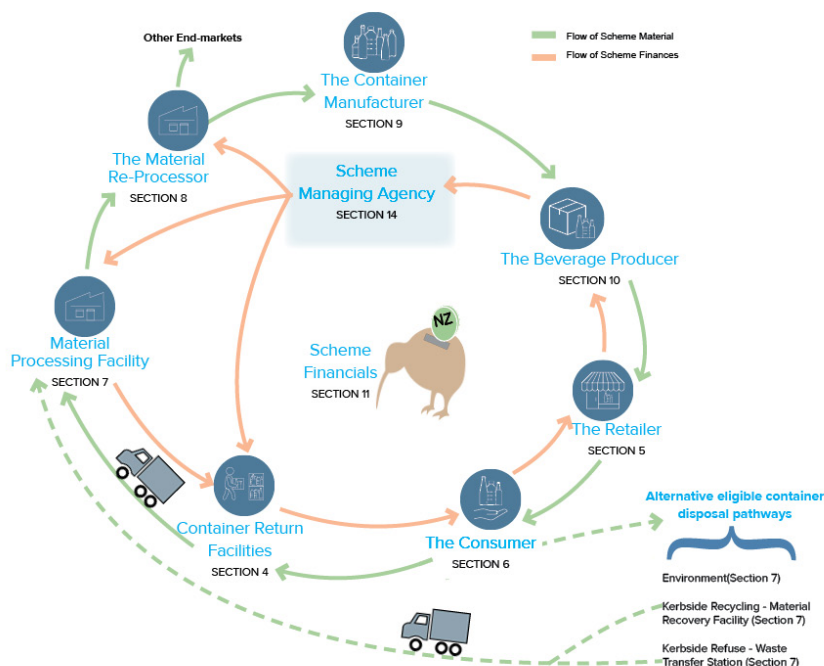
In other jurisdictions this central organisation is known under different names such as Product Responsibility Organisation, Scheme Administrator, Scheme Coordinator, etc. but in principle their function is the same.

This section also continues the use of the term Extended Producer Responsibility (EPR) and Kaitiakitanga Whakanaonga - Product Stewardship previously discussed in Section 12. The NZ CRS as previously discussed can be considered as a form of Kaitiakitanga Whakanaonga - Product Stewardship where the whole huringa mataora – life-cycle impact of the container is considered the responsibility of the complete supply chain including the producer. Ultimately the true huringa mataora – life-cycle cost of managing the container is reflected in its purchase price and passed onto the consumer at the point of sale. However, it is acknowledged, that individual market responses may see producers include any scheme cost into their pricing considerations which may, for example, involve producers and retailers absorbing scheme costs due to a range of factors such as competitive market pricing and reducing potential cost increases to the consumer.

The role of a Managing Agency in a Kaitiakitanga Whakanaonga - Product Stewardship system (and within the NZ CRS) is an important aspect as it is the entity responsible for the operation and the performance of the scheme including the following components which are discussed in more detail throughout this section:

- Container collection system;
- Consumer awareness and scheme interface;
- Container return rates;
- Management of scheme costs;
- Measurement of scheme performance;
- Kaitiakitanga Whakanaonga - Product Stewardship Responsibilities;
- Scheme dispute resolution;
- Scheme reporting;
- Scheme innovations;
- Compliance with any legislative requirements;
- Roles and responsibilities; and
- Scheme targets and consequences for not meeting these.

As seen in previous sections, the following schematic illustrates the broad mechanism of a NZ CRS design, which includes the roles and relationships of the respective scheme participants, including the container manufacturer, and the broad movement of the scheme financials (e.g., the deposit, scheme fee and the Advanced Material Recycling Fee). As with many container return schemes, scheme participants (e.g., Consumer, retailer, container return facility, producer, Managing Agency) cannot be considered in isolation of one another, as scheme success is underpinned by integrated and inter-connected relationships coordinated and fostered by a Managing Agency. Focussing on the below schematic, the Managing Agency is defined as the organisation responsible for the operation (e.g., transport logistics, container return facilities) and performance (e.g., container return rate, scheme financials) of the scheme, supported by a Governance Board providing the strategic direction and active oversight to the scheme (Section 15).



Commonly, container return scheme Managing Agencies comprise a single organisation to manage the range of eligible scheme material and brands (e.g., collection, transportation and processing), but which may operate under a ‘shared responsibility’ model where municipalities (i.e., local councils) are responsible for collection and sorting of materials (e.g., collection of eligible scheme material via kerbside recycling services). This ‘shared responsibility’ model may also be applicable for the NZ CRS design whereby the scheme actively utilises existing infrastructure, some of which may be under local council ownership.

In the Aotearoa New Zealand context, the municipal waste sector was legislated under the Waste Minimisation Act 2008 (WMA) ‘to promote effective and efficient waste management and minimisation in their district (Refer Sec 42 of the WMA). The output response to this legislative requirement has varied across each Territorial Authority (TA) but in general terms has resulted in the establishment of waste management and minimisation services and associated infrastructure that collect, process and on sell recyclable materials. Some TA’s carry out these services through internal Council Controlled Organisations (CCO) whilst the majority outsource the contract to private companies. TA’s recover costs associated with waste management and minimisation services and infrastructure through a combination of users pays fees, general and targeted rates and a reallocation of funds, on a population basis, from the Waste Disposal Levy. The NZ CRS therefore has to be mindful of this, particularly in relation to existing infrastructure to avoid stranding assets from material flows.

The operation and functioning of most container return schemes have roles for government, producers, retailers, consumers, material processors and material re-processors. The degree of influence of each of these groups is typically dependent on the governance arrangements and responsibilities assigned to the Managing Agency. For example, the role of local government in the operation and functioning of the NZ CRS may be influenced by pre-existing legislation defining the degree of involvement and/or influence in the operation of the NZ CRS. Notwithstanding current legislation, a detailed review of the current legislation, existing legislative conditions and any additional legislative changes will be required during the NZ CRS implementation phase to allow for effective implementation of the scheme as designed.

Broadly, Managing Agencies can be not-for-profit (typically; e.g., Managing Agencies in British Columbia, Canada are legally obliged to have not-for-profit status), for-profit firms (occasionally) and government agencies (rarely). Each of these Managing Agency entities are discussed briefly below.

- Not-for-profit (also known as non-profit) Managing Agency
  - Many global container return schemes employ a not-for-profit (non-profit) model to ensure that scheme revenues are used to support the operation of the scheme. This is achieved by the Managing Agency generally having to meet specific conditions which may include the provision of Annual Reports with full financial transparency of the scheme and requirements to reinvest any revenues from the sale of material or unredeemed deposits back into the scheme. The not-for-profit model has been reported to avoid matters which a for-profit model could influence such as incentives to increase profitability whilst lowering environmental performance as a means of cost-saving. Not-for-profit Managing Agencies can still drive efficiency through commercial discipline and good business practice they are simply budgeted to deliver a profit as near to zero as practical.
- For-Profit Managing Agency
  - The main reason to support a for-profit Managing Agency is generally based on the premise that a profit incentive will drive the Managing Agency to be efficient with scheme goals achieved in a cost-efficient manner. There is also reported concerns regarding the perception that for-profit Managing Agencies accumulate and hold large financial reserves. That said, this perception can be overcome by ensuring that the use of a profit is set out in the roles and responsibilities of the Managing Agency supported by an appropriate legislative framework where necessary. The NZ CRS needs to consider the actual and perceived function of a profit as opposed to dismissing it on principle. It is also noted that ultimately a for-profit Managing Agency represents additional cost if the same outcome and performance can be achieved as a not-for-profit.
- Government Managing Agency
  - Broadly, the role of government in container return schemes have generally been reported as undertaking the collection and disbursement of fees where the industry may have limited experience and/or maturity in operating similar systems and/or schemes<sup>924</sup>. This approach has led to concerns that the government may divert some, or all, of the surplus fees to fund non-scheme purposes. However, government has a much broader role whereby it sets the appropriate enabling legislation to create the platform within which the container return scheme can function effectively (e.g., setting of return rate targets, setting reporting and audit requirements).

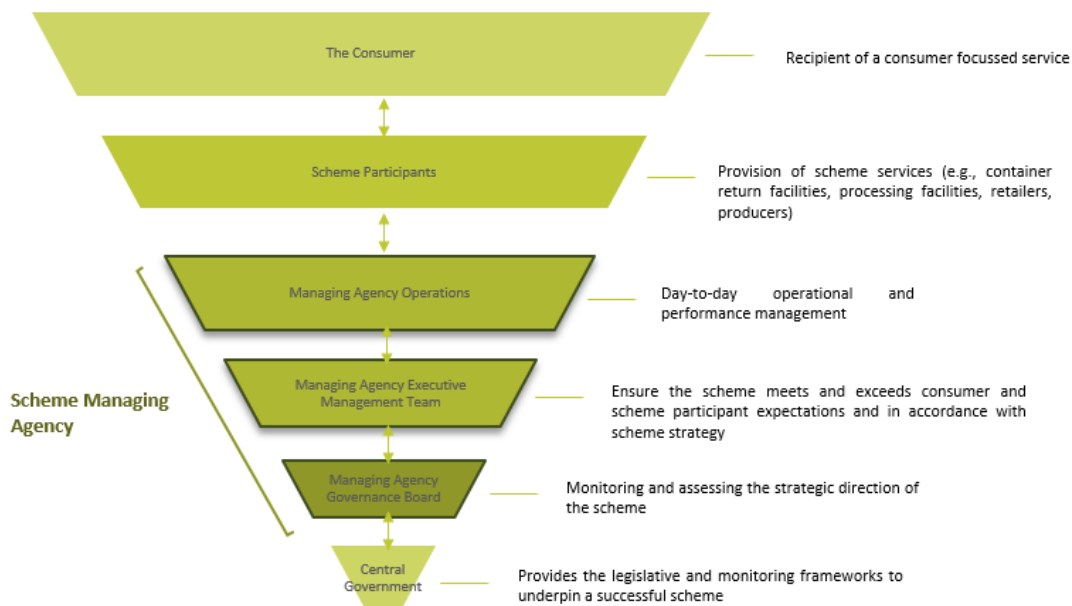
As not-for-profit is the predominant legal status of a Managing Agency in many container return schemes, no further discussion will be provided here on for-profit or Government Managing Agencies.

Therefore, taking into consideration the importance of the Managing Agency and the role this organisation has on the operation and performance of a NZ CRS, determination of the status of the Managing Agency (i.e., not-for-profit, for-profit, government led) will influence and shape the degree of accountability and transparency as well as determining the role the Managing Agency has on enabling broader Kaitiakitanga Whakanaonga - Product Stewardship Responsibilities. The following sections discuss the Managing Agency and its importance in container return schemes with a series of global case studies provided where appropriate to illustrate how other jurisdictions have established and implemented a not-for-profit organisation to meet the requirements of the respective container return scheme.

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<sup>924</sup> Extended Producer Responsibility: Updated Guidance for Efficient Waste Management, OECD 2016, OECD Publishing, Paris

For the purpose of clarity, The NZ CRS Managing Agency and Governance Board is referred to as a single organisation with clear separation between the management (i.e., operation, performance and executive management) and governance functions (i.e., scheme Governance Board, strategic direction, and legislative accountability). As such, Section 14 will discuss the operational and executive management functions of the Managing Agency (i.e., the Operational Team and Executive Management Team) as highlighted in the below schematic. Section 15 will discuss the strategic governance function of the Managing Agency (i.e., the scheme Governance Board).



## 14.1 Aotearoa New Zealand Kaitiakitanga Whakanaonga - Product Stewardship and Scheme Accreditation

Building on the discussion within Section 2 and Section 12, the New Zealand Government is moving to transition from a linear economy to ōhanga āmiomio - circular economy whereby producers, importers, brand owners, retailers, consumers and other parties involved in the huringa mataora - life-cycle of a product accept a responsibility for the environmental impacts of the products through their huringa mataora - life-cycle. For clarity and as discussed in Section 12, the term Kaitiakitanga Whakanaonga - Product Stewardship reflects the current New Zealand legislative framework, expressed in the Waste Minimisation Act (2008) as follows:

*Under the current Aotearoa New Zealand voluntary process, organisations can apply for formal government accreditation of their voluntary scheme but must demonstrate that the scheme can minimise waste and achieve reductions in environmental harm.*

### Part 2 Product stewardship

#### 8 Purpose of Part

The purpose of this Part is to encourage (and, in certain circumstances, require) the people and organisation in the life of a product to share responsibility for—

- (a) ensuring there is effective reduction, reuse, recycling, or recovery of the product; and
- (b) managing any environmental harm arising from the product when it becomes waste.

Currently, the Manatū Mō Te Taiao - Ministry for the Environment has accredited several voluntary kaitiakitanga whakanaonga - product stewardship schemes which are discussed further in Section 2. However, the Manatū Mō Te Taiao - Ministry for the Environment have acknowledged that transitioning to ōhanga āmiomio - circular economy will require co-regulated or mandatory schemes to be developed and implemented for a range of product categories.

Under the current Aotearoa New Zealand voluntary process, organisations can apply for formal government accreditation of their voluntary scheme but must demonstrate that the scheme can minimise waste and achieve reductions in environmental harm. To do this, the accreditation process (i.e., undertaken by the Ministry or an independent assessor) assesses the application against the Waste Minimisation Act 2008 (Part 2) to determine if the scheme meets the requirements of the Act. Further, the General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020 requires the accreditation of the regulated and mandatory Product Stewardship schemes which are set out in Sections 13 to 15 of the Waste Minimisation Act 2008.

In addition, the Waste Minimisation Act 2008 also provides an option for the Minister for the Environment to Gazette guidelines regarding schemes for the priority products. The General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020 are based on the priority product consultation guidelines<sup>925</sup> and are expected to include (but not be limited to) the following elements:

- Timeframe
  - How long a scheme would last.
- Targets
  - The expected reduction in harm to the taiao - environment from a scheme's implementation or the expected benefits from reduction, reuse, recycling, recovery or treatment of the product.
  - The time within which these are expected to occur.
  - The expected waste minimisation, treatment or disposal objectives and when these would be achieved.
- Transparency
  - Reporting and information requirements, including information to be provided to purchasers, users and handlers of the product.

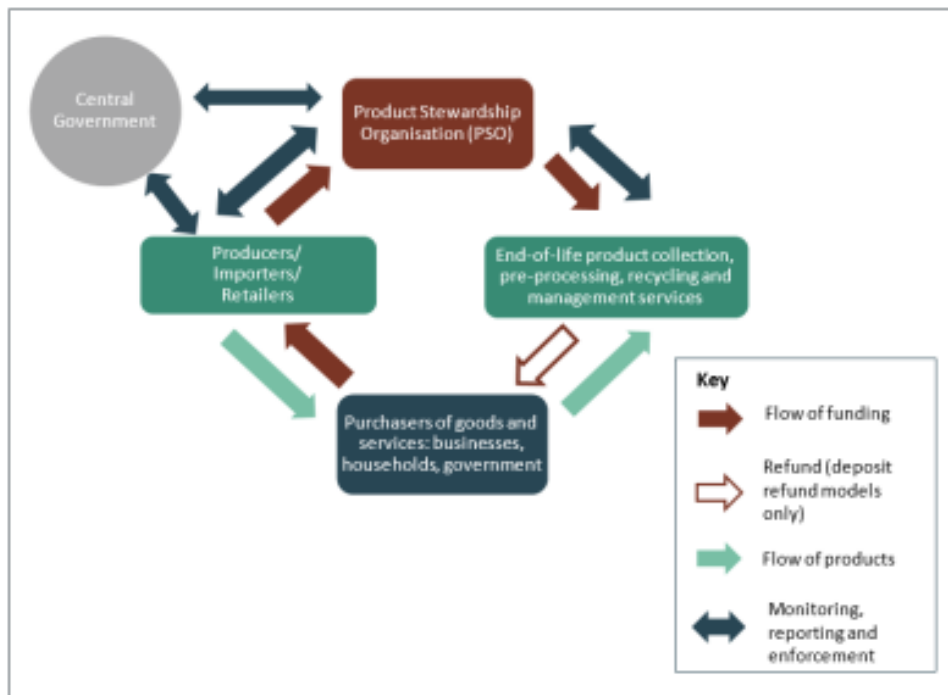
As noted above, Aotearoa New Zealand currently has no regulated schemes in place meaning the provisions to do so as set out in the Waste Minimisation Act 2008 have not yet been used. As such, consultation is currently underway to establish co-regulated schemes for six (6) priority products under the Waste Minimisation Act 2008:

- Tyres;
- Electrical and electronic products (e-waste);
- Refrigerants and other synthetic greenhouse gases;
- Agrichemicals and their containers;
- Farm plastics; and
- Packaging.

Broadly, the priority product consultation document acknowledges that the most common regulated Product Stewardship schemes involve product take-back, advance fees and deposit-refund models with the below schematic indicating an indicative design of how an advance disposal fee or deposit-refund system might work in Aotearoa New Zealand.

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<sup>925</sup> Ministry for the Environment 2019. Proposed Priority Products and Priority Product Stewardship Guidelines: Consultation Document. Wellington: Ministry for the Environment



**Figure 52: Indicative design of an advance disposal fee or deposit-refund system**<sup>926</sup>

Further, the structure and governance of the agency responsible for managing a regulated Product Stewardship scheme (i.e., Managing Agency) has been reported by the Manatū Mō Te Taiao - Ministry for the Environment as being typically managed by not-for-profit entities that represent all producers for the specific product group. Broadly, the consultation sets out the responsibilities of the Managing Agency as follows:

- Manages funds;
- Contracts for services;
- Operates any funding and take-back systems; and
- Reports to government and stakeholders.

*Many global container return schemes employ a not-for-profit (non-profit) model to ensure that scheme revenues are used to support the operation of the scheme. This is achieved by the Managing Agency generally having to meet specific conditions which may be imposed by the Governance Board and/or required by government legislation.*

Additionally, the priority products consultation document sets out the government's role in regulated Product Stewardships schemes as being to accredit, monitor and enforce the scheme.

As discussed throughout this document, the design of the NZ CRS will initially focus on single-use beverage containers which aligns with the 'Packaging' priority product listed above, but will include provisions to enable the expansion of the range of other containers (e.g., kitchen, laundry, garage containers). So, the design and implementation of a NZ CRS will support the proposed regulated packaging priority Product Stewardship scheme by reducing the risk of harm from packaging waste whilst providing economic and social benefits from a more circular use of the rawa - resources.

## 14.2 Not-for-Profit Managing Agency Structure

Broadly, and as noted in Section 12, most global container return schemes operate under a not-for-profit (also referred to as non-profit) model rather than a for-profit model. While there are varied reasons for this, the following list provides several reported areas against the use of for-profit models in container return schemes:

<sup>926</sup> Ministry for the Environment 2019. Proposed Priority Products and Priority Product Stewardship Guidelines: Consultation Document. Wellington: Ministry for the Environment

- Maximisation of profits and distribution to shareholders; and
- Incentivisation for scheme Managing Agencies to offer preferential treatment to larger more profitable participants.

Further as reported by the OECD<sup>927</sup>, opponents of the for-profit Managing Agency model noted that under a profit model this could lead to incentives to increase profitability whilst lowering environmental performance as a means of cost-saving. As such, many global container return schemes employ a not-for-profit (non-profit) model to ensure that scheme revenues are used to support the operation of the scheme. This is achieved by the Managing Agency generally having to meet specific conditions which may be set out by the Governance Board (Section 15) and/or required by government legislation, which may include the provision of Annual Reports with full financial transparency of the scheme and requirements to reinvest any revenues from the sale of material or unredeemed deposits to be put back into the scheme.

Taking the outcomes of the above discussion, the NZ CRS Managing Agency structural arrangement (i.e., single independent and not-for-profit organisation) has a pivotal role in the ultimate success of the schemes operation (including the promotion of the uptake of refillables and where possible encourage new opportunities for refilling) and performance to consistently deliver a consumer focused scheme and strive to make the scheme as cost efficient as possible whilst continually improving on and reporting against the schemes social, economic, cultural and environmental objectives.

The following case study examples from the Oregon, Denmark, Alberta and Queensland container return schemes discuss examples of not-for-profit Managing Agency structures (e.g., sector representation) as well as the Agency's role and responsibilities to manage the operation and performance of the scheme. In addition to those case studies discussed below, Section 12.4.2 provides a further detailed overview of the not-for-profit 'Return-It' container return scheme in British Columbia.

### 14.2.1 Oregon Container Return Scheme Case Study

The Oregon container return scheme was introduced through Oregon's Bottle Bill in 1971 and was the first container return scheme in the United States of America. The scheme was implemented to address the litter problem along Oregon beaches, highways and other public areas. In 2009, the not-for-profit Oregon Beverage Recycling Cooperative (OBRC – cooperative corporation owned by Oregon beverage distributors and grocery retailers) was formed from a merger between Container Recovery Inc. and Beverage Recyclers of Oregon to manage the deposit flow, reimburse grocery retailers for refunds paid to the public, pick-up and process returned beverage containers and operate the scheme container return facilities (i.e., BottleDrop Redemption Centres)<sup>928</sup>. In addition to the OBRC managing the flow of deposits, it also manages the unredeemed deposits which go to the OBRC to fund bottle collection and BottleDrop Redemption Centres (i.e., container return facilities)<sup>929</sup>.

Further, in 2017 in response to the eligible container return rates staying below 80% for two (2) consecutive years (68% in 2014 and 64% in 2015), the Oregon Bottle Bill was expanded by the State Government to increase the deposit value of USD 5-cents to USD 10-cents and expand the list of eligible containers. Figure 53 illustrates the increase in containers recycled as a result of the Oregon Bottle Bill expansion – increased deposit value and expansion of eligible containers.

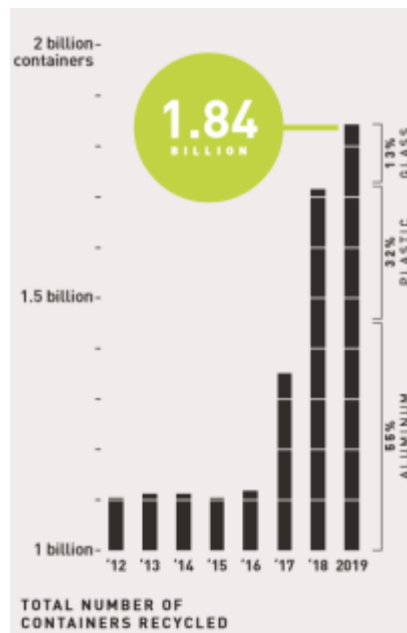
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<sup>927</sup> Extended Producer Responsibility: Updated Guidance for Efficient Waste Management, OECD 2016, OECD Publishing, Paris

<sup>928</sup> <https://www.obrc.com/About/WhoWeAre>

<sup>929</sup> Association of Oregon Recyclers. Where do your unredeemed beverage deposits go, 2018





**Figure 53: Total number of containers recycled in the Oregon container return scheme<sup>930</sup>**

Further, in its 2019 Annual Report, the not-for-profit OBRC reported the following scheme performance figures:

- Collection of 1.84 billion eligible containers with a scheme return rate of 90.8%;
- USD\$18.2 million of non-refunded deposits;
- 206 cooperative scheme participants (57 cooperative participants in 2009);
- 405 employees (156 employees in 2009); and
- 182 million pounds (approximately 82,500 tonnes) of material recycled (142 million pounds [approximately 64,400 tonnes] of material recycled in 2009).

In addition to the container return scheme, the OBRC has recently incorporated refillables into the scheme in partnership with local breweries to expand additional Product Stewardship efforts. For further information regarding the integration of refillables into the Oregon container return scheme, the reader is referred to Section 12.1.4.1.

## 14.2.2 Danish Container Return Scheme Case Study

The Dansk Retursystem was established in 2000 under the Danish Statutory Order on Deposits which specified that the scheme's Managing Agency (Dansk Retursystem) should be not-for-profit. The intent of this specification was to ensure that the Managing Agency's only purpose of the deposit and return system was to recycle as many empty eligible containers as possible into new containers.

The Dansk Retursystem is a limited-liability company and is majority owned by the Danish breweries which collectively comprise Dansk Retursystem Holding; one (1) of the four (4) owners<sup>931</sup>. The percentage split between the respective owners of Dansk Retursystem are reported as follows:

- Dansk Retursystem Holding – 85.62%
- Harboes Bryggeri – 14.27%
- Bryggeriet Vestfyen – 0.1%
- Mineralvandsfabrikken Frem – 0.01%

<sup>930</sup> Oregon Beverage Recycling Cooperative, Annual Report 2019

<sup>931</sup> <https://www.danskretursystem.dk/en/about-dansk-retursystem/ownership-board/>

As noted above, the Dansk Retursystem Holding comprises Danish breweries which include Carlsberg, Royal Unibrew, Thisted Bryghus, Bryggeriet Fuglsang and Hancock Bryggerierne. As will be discussed in Section 15, the Dansk Retursystem also operates a 13-member Board of Directors (including the Chair) with representatives from the breweries, importers of beverages and the retail trade.

As a not-for-profit organisation, the Dansk Retursystem operates under an exclusive right arrangement with the Danish Environmental Protection Agency which also imposes a requirement for the scheme to always be efficient and to keep costs as low as possible<sup>932</sup>. To help achieve this, the Dansk Retursystem puts all major procurements out for competitive tender to optimise the price and broader environmental considerations and continually reviews operations to maximise efficiencies.

Further, to ensure oversight of the Dansk Retursystem, the Danish Environmental Protection Agency monitors activities of the scheme and undertakes an evaluation of the scheme before the exclusive rights are awarded for a new term. No further details of the monitoring activities, key performance indicators or details of the exclusive right arrangement were available at the time of writing.

### 14.2.3 Alberta Container Return Scheme Case Study

The Alberta container return scheme was established in 1972 under the Litter Act (Alberta) to address the states litter problem which was attributed to the disposal of single-serve beverage containers. Around this time, the Alberta Beverage Container Recycling Regulation was also created which required manufacturers to be responsible for their empty containers and has since undergone a revision in 1993 which now requires manufacturers using regulated non-refillable beverage containers to appoint a common collection system agent to operate the collection system. The result of this regulation was the establishment of the not-for-profit Alberta Beverage Container Recycling Corporation (ABCRC) which comprises a Board of Directors and an Executive Team, collectively which is responsible for the collection, transportation, processing and recycling of registered eligible scheme containers under the following mandate:

- Operate a common collection system for registered containers;
- Be responsible for recycling used, non-refillable beverage containers;
- Comply with the Beverage Container Recycling Regulation and the Beverage Container Management Board (BCMB) bylaws; and
- Promote the economic and efficient collection of non-refillable beverage containers.

Briefly, the ABCRC Board of Directors comprises eight (8) representatives from the beverage manufacturers who do not receive any remuneration for their time and input into the ABCRC Board. The ABCRC Executive Team comprises senior managers of ABCRC and are connected to the ABCRC Board of Directors through the President of the Executive Team<sup>933</sup>.

However, as reported by ABCRC in the 2018 Annual Report, the schemes original position to recycle beverage containers because of the environmental benefits is no longer the sole objective of the scheme with the scheme's focus now shifting to whakahaere rauemi - resource management<sup>934</sup>. This shift also recognises the economic and social benefits resulting from the scheme as well as the principles of a circular economy.

Further, of note is the structure of the Alberta container return scheme which comprises three (3) organisations which together manage the performance of the scheme (Figure 54):

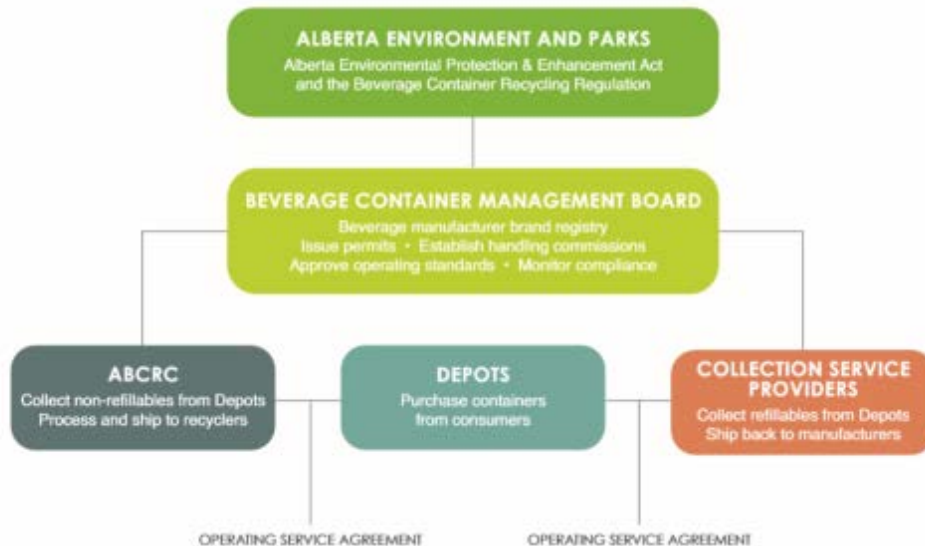
- The not-for-profit Alberta Beverage Container Recycling Corporation (ABCRC) responsible for the collection, transportation, processing and recycling of registered eligible scheme containers.

<sup>932</sup> <https://www.danskretursystem.dk/en/about-dansk-retursystem/regulated/>

<sup>933</sup> Alberta Beverage Container Recycling Corporation Annual Sustainability Report 2018

<sup>934</sup> Alberta Beverage Container Recycling Corporation Annual Sustainability Report, 2018

- The Beverage Container Management Board (BCMB) a delegated administrative organisation mandated under the Alberta Beverage Container Recycling Regulation to regulate and enhance the scheme (discussed further in Section 15).
- Alberta Bottle Depot Association (ABDA) provides the industry voice for the schemes bottle depots. As discussed in previous sections, the Alberta scheme comprises approximately 200 collection sites located throughout most of Alberta and which are serviced by the ABCRC and regulated by the BCMB.



**Figure 54: Structure of the Alberta container return scheme**<sup>935</sup>

In addition to the mandate of the scheme, the ABCRC has established several guiding principles to guide the organisations operations as the scheme’s Managing Agency<sup>936</sup>:

- Ensure high standards of transparency and accountability;
- Promote and encourage beverage container recovery;
- Ensure each container type (material/size) is self-funding;
- Minimise the cost of beverage container recycling;
- Strive for continuous improvement in operations;
- Maintain a safe and healthy environment for employees; and
- Provide a culture of honesty and integrity.

The ABCRC comprises both a senior team responsible for the day-to-day operation of the Alberta container return scheme and a corporate governance team established to ensure scheme objectives are realised, resources are well managed, and the interests of stakeholders are reflected in key decisions. Further discussion is provided in Section 15 regarding the ABCRC corporate governance team.

#### 14.2.4 Queensland Container Return Scheme Case Study

The Queensland, Australia container return scheme was established under the Waste Reduction and Recycling Act 2011 provisions which provides the legislative framework for the scheme to operate within. Of note, an amendment to this Act was published in 2018, namely the Waste Reduction and Recycling (Container Refund Scheme) Amendment Regulation 2018 which sets out the key objectives of the scheme and which the Managing Agency must adhere to. The objectives as per the Waste Reduction and Recycling (Container Refund Scheme) Amendment Regulation 2018 are as follows:

<sup>935</sup> Alberta Beverage Container Recycling Corporation Annual Sustainability Report 2018

<sup>936</sup> <https://www.abcrc.com/about-us/about-abcrc/>

- Increase the recovery and recycling of beverage containers;
- Reduce the number of empty beverage containers that are littered or disposed of to landfill;
- Ensure that the manufacturers of beverage products meet their Product Stewardship responsibility in relation to their beverage products;
- Provide opportunities for social enterprise and benefits for community organisations; and
- Complement existing collection and recycling activities for the state.

Shortly after the Waste Reduction and Recycling Act 2011 was passed, Container Exchange (COEX) was conditionally appointed as the Product Responsibility Organisation (i.e., Managing Agency) to operate and provide governance for the scheme known as Containers for Change<sup>937</sup>.

While there is no apparent legislative requirement for the scheme managing organisation to be not-for-profit, COEX established itself as a not-for-profit organisation to run the Queensland container return scheme. As reported by COEX, the organisations focus is on 'reducing beverage container litter, increasing recycling efforts and helping the community to benefit through charities, community groups and not-for-profit organisations participating in the scheme'<sup>938</sup>. Further, at the start of the scheme, the Queensland Government gave COEX an AUD\$35million interest free 18-month loan to provide working capital for the operation of the scheme<sup>939</sup> (noting the scheme payment system has now been changed to a payment in arrears system where first suppliers<sup>940</sup> provide their sales data at the end of every month and must pay within the next month). As reported in the COEX 2018/19 Annual Report, this loan will be repaid in full during the financial year ending 30 June 2020.

Further, as reported in the Annual Report 2018/19, COEX as a not-for-profit organisation 'must invest all surplus back into the operation and advancement of the scheme' and reported AUD\$194.6million in revenues delivering an operating surplus of AUD\$27.9million in the year ending 30 June 2019. As also noted, the surplus will be used to start the repayment of AUD\$35million government loan and cover pre-scheme commencement costs during the 2018 financial year<sup>941</sup>. A high-level review of the Waste Reduction and Recycling Act 2011 and the Waste Reduction and Recycling (Container Refund Scheme) Amendment Regulation 2018 did not indicate specific clauses requiring COEX to 'reinvest all surplus back into the operation and advancement of the scheme' however this requirement may be included within the contractual agreement with the Queensland Government. Further, a review of the Australian Charities and Not-for-Profits Commission<sup>942</sup> notes that a 'not-for-profit' can make a profit but any profit made must be used for its purposes. It can keep profits so long as there is genuine reason for this and it is to do with its purpose (e.g., profits needed for infrastructure or a building, or accumulating reserve so it can continue to be sustainable).

In addition to the objectives of the scheme, the Waste Reduction and Recycling (Container Refund Scheme) Amendment Regulation 2018 also sets specific scheme performance requirements, including specifying the number of container refund points and setting of scheme container recovery rates, noting the following:

- Requires container recovery rates to be achieved by the Organisation (i.e., COEX) for preliminary years and that the Organisation (i.e., COEX) must decide a percentage that it proposes to achieve as the container recovery rate for that year and must publish the rate on its website starting in 2018 and then again in 2019 and 2020.

<sup>937</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>938</sup> <https://www.containerexchange.com.au/about-us/>

<sup>939</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>940</sup> Defined by the New South Wales Container Deposit Scheme First Supply Approach as a supplier who makes the first supply of beverages in a container only needs to ensure that a container approval is in force that applies to the relevant container

<sup>941</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>942</sup> <https://www.acnc.gov.au/for-charities/start-charity/not-profit>

- Requires that the Organisation (i.e., COEX) must achieve a container recovery rate of at least 85% for the financial year starting 01 July 2021 and for each subsequent later financial year.

As reported by Managing Agencies in many other container return schemes, COEX has also established the following values which are used by the organisation to guide its culture, actions and decision-making; in addition to the requirements of the Waste Reduction and Recycling Act 2011 and the Waste Reduction and Recycling (Container Refund Scheme) Amendment Regulation 2018:

- Environment and Sustainability;
- Ownership and Accountability;
- Customers and Community;
- Respect; and
- Integrity.

Further, of note is the structure of the Queensland container return scheme which comprises a nine (9) member Board<sup>943</sup> comprising representatives from beverage, manufacturing and logistics industries and which abide by the rules of the 'Board Charter' (discussed further in Section 15) and an Executive Board comprising the following five (5) COEX representatives<sup>944</sup>:

- Chief Executive Officer;
- General Manager Operations;
- General Manager Finance;
- General Manager Corporate and Community Relations; and
- General Manager Audit and Risk.

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*A Managing Agency may be required to manage and deliver all aspects (e.g., financial, marketing, consumer interface, transportation and processing) of the scheme or simply manage and deliver specific components of the scheme (e.g., collection and transportation) which in turn influences the degree of control the Managing Agency has on the performance of the scheme.*

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Briefly, the COEX Board Charter sets out the manner in which the Board carries out its responsibilities in accordance with good corporate governance, international best practice and applicable laws, including the not-for-profit status. Additionally, COEX is a public company limited by guarantee which means the 'income and property of the company must only be used to further the objects of the company as set out in the COEX Constitution with no income or property, or assets to be paid or transferred directly or indirectly, to any Member by way of dividend, bonus or otherwise'<sup>945</sup>. The COEX Board and Board Charter will be discussed further in Section 15.

### 14.3 Roles and Responsibilities

The roles and responsibilities of Managing Agencies from across the range of global container return schemes is variable depending on the scheme design and specific statutory elements imposed by the respective jurisdictions. For example, a Managing Agency may be required to manage and deliver all aspects (e.g., financial, marketing, consumer interface, transportation and processing) of the scheme or simply manage and deliver specific components of the scheme (e.g., collection and transportation) which in turn influences the degree of control the Managing Agency has on the performance of the scheme. However, there appear to be several common themes which apply to many schemes which form the basis of the Managing Agency and which will apply to the establishment of a NZ CRS Managing Agency, particularly where the scheme is a not-for-profit organisation. These common themes, in relation to scheme performance and the Managing Agency's roles and responsibilities include:

- Clear expectations, expressed through the role and responsibility of the scheme Managing Agency;
- The operation of the scheme is efficient and as low cost as possible;

<sup>943</sup> <https://www.containerexchange.com.au/about-us/>

<sup>944</sup> <https://www.containerexchange.com.au/about-us/>

<sup>945</sup> Container Exchange (QLD) Limited, Board Charter Adopted on 17 April 2019

- Efficient and convenient return locations for consumers;
- Transparency and accountability;
- Promote and maintain beverage container return rates;
- Continuous scheme improvement;
- Promote and where possible ensure scheme participants meet their responsibilities in regard to the eligible scheme containers;
- Provide opportunities for social enterprise and benefits to community organisations; and
- Complement existing recycling activities.

Acknowledging the above, the NZ CRS Managing Agency will require clarity on its role and responsibility in providing the day-to-day operational and performance management to ensure the scheme meets consumer and scheme participant expectations. To achieve this, the role and responsibility of the NZ CRS Managing Agency needs to be supported by a clear and robust bespoke container return scheme legislative instruments (e.g., Regulations) which will define and set requirements to ensure the Managing Agency delivers a successful scheme to all New Zealanders and continually improves the service to consumers. This should include setting out what powers of authority rest with the Managing Agency and what powers of authority rest with the regulatory authority.

The following Danish case study provides an example of where the Managing Agency is responsible for the complete delivery of the container return scheme, including the provision of a standardised set of container collection equipment kits with each kit charged a separate refundable deposit to manage collection processes.

### 14.3.1 Danish Case Study

As discussed in Section 14.2.2 above, the Dansk Retursystem is a not-for-profit organisation as required by the Danish Statutory Order on Deposits, meaning the purpose of the container return scheme under the management of the Managing Agency is to recycle as many empty bottles and cans as possible into new bottles and cans. As has been discussed in previous sections, the financial system of the Dansk Retursystem container return scheme is set up based on three (3) sources of income (sale of scheme material, unredeemed deposits<sup>946</sup> and an annual fee paid by producers and importers depending on the type and volume of bottle or can and how easily the material is to recycle) which are used to fund the operations of the scheme<sup>947</sup>.

Additionally, to help achieve high scheme return rates, the Dansk Retursystem is set up so that the Managing Agency controls the method by which eligible scheme containers are collected, including the tracking and tracing of containers via barcodes. The Dansk Retursystem requires collection facilities to register with the scheme after which Dansk Retursystem will send the appropriate container collection equipment and supporting supplies as agreed<sup>948</sup>. Additionally, the Dansk Retursystem reserves the right to change the container type provided to ensure collections are optimised. Further, the provision of the collection equipment and supplies incurs a deposit fee for each collection item with the condition that the equipment is used only for the purpose of collecting and storing scheme eligible containers. Consequently, the range of collection equipment items and supplies remains the property of the Dansk Retursystem Managing Agency and cannot be sold to third parties. For example, the provided collection equipment includes:

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<sup>946</sup> The 2013 Finance Act required Dansk Retursystem transfer some of the unredeemed deposits to the state budget over a period of five years.

<sup>947</sup> <https://www.danskretursystem.dk/en/about-dansk-retursystem/funding/>

<sup>948</sup> <https://www.danskretursystem.dk/en/store-office-restaurant/about-collecting/5314-2/>

- Collapsible pallet boxes for glass containers<sup>949</sup>.
  - Refundable deposit DKK1,200 (approximately NZD\$289.21) excluding VAT. A deposit of DKK10 (approximately NZD\$2.37) for each starter kit which is refunded together with the deposits on the glass bottles returned. Lost barcodes cost DKK5 (approximately NZD\$1.19) each and are not refunded.
- Bulk containers for bottles and cans<sup>950</sup>.
  - Refundable deposit DKK1,200 excluding VAT, including DKK300 (approximately NZD\$71.41) for a lost bulk container lid.
- Sealed containers for bottles and cans<sup>951</sup>.
  - Refundable deposit DKK1,200 excluding VAT.
- Collection sacks<sup>952</sup>.
  - Provision of an initial starter pack with subsequent packs of 10 sacks, strips and barcodes charged at DKK10 each (minimum of two (2)-packs per order). A lost barcode is charged at a non-refundable amount of DKK5.
    - For example, restaurants, cafés, hotels, offices pay a refundable deposit of DKK10 plus VAT for each collection sack kit. A single large collection sack is charged at an additional DKK6 (approximately NZD\$1.42) plus VAT.

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*In most cases, the Managing Agency is responsible for the operation and performance of the container return scheme, including financial and commercial management, operational management, corporate and community relationship management, audit and risk management as well as oversight by a Chief Executive Officer.*

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From the available information, the Dansk Retursystem Managing Agency has an important role in monitoring scheme efficacy, including cost efficiency and consistency of service to ensure it meets the Danish Environmental Protection Agency exclusive right arrangements, specifically that the scheme is efficient and as low cost as possible.

## 14.4 Authority

The level of authority a Managing Agency has depends on the specific mandate of the Agency and any targets imposed on the scheme through specific jurisdictional legislation. In most cases, the Managing Agency is responsible for the operation and performance of the respective container return scheme which commonly includes financial and commercial management, operational management, corporate and community relationship management, audit and risk management as well as oversight by a Chief Executive Officer. Where information was available commonly through scheme websites, the Managing Agency was typically, responsible and had authority for, the delivery of the scheme including, but not limited to, the following components:

- Management of container return facilities;
- Collection of eligible scheme containers;
- Transportation of eligible scheme containers to processors and/or re-processors;
- Management of the scheme material;
- Marketing and education initiatives;
- Audit and risk management;

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*The establishment of a suitable dispute resolution process for the NZ CRS design will be important to ensure scheme participants have a formal process in the event of any disputes that may arise during the course of the scheme term or through specific contractual arrangements.*

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<sup>949</sup> <https://www.danskretursystem.dk/en/store-office-restaurant/about-collecting/5314-2/collection-of-glass-bottles-in-pallet-boxes-or-collapsible-pallet-boxes/>

<sup>950</sup> <https://www.danskretursystem.dk/en/store-office-restaurant/about-collecting/5314-2/collection-in-compactor-bulk-containers-or-in-sealed-containers/>

<sup>951</sup> <https://www.danskretursystem.dk/en/collection-in-compactor-bulk-containers-or-in-sealed-containers-2/>

<sup>952</sup> <https://www.danskretursystem.dk/en/store-office-restaurant/about-collecting/5314-2/collection-in-sack/>

- Scheme financial management;
- Reporting and compliance; and
- Social responsibility.

Consequently, while there was limited available information detailing the Managing Agency's level of authority, many schemes appeared to follow a commercial approach where day-to-day decisions regarding the performance and/or operation of the scheme were carried out by the Managing Agency under strategic direction and oversight of the respective Governance Board (see Section 15 for further information).

Therefore, considering the NZ CRS design, a Managing Agency that is structured as a single, independent and not-for-profit organisation is anticipated to be best placed to manage the day-to-day operation and performance of the scheme, supported by an independent Governance Board providing the strategic direction and oversight. The benefit of this approach is a single Managing Agency with the authority and responsibility to ensure the operation and performance to consistently deliver a consumer focussed scheme and strive to make the scheme as cost efficient as possible whilst continually improving on and reporting against the schemes social, economic, cultural and environmental objectives.

For completeness and to provide clarity there is a requirement to stipulate what powers of authority rest with the Managing Agency and what sits with the Regulatory Authority. An example of this is the level of deposit which would rest with the Regulatory Authority and could include, for example, what would trigger the need to increase the deposit level.

## 14.5 Dispute Resolution

The process for dispute resolution (e.g., reconciliation of financial payments, audit and compliance reporting, deposit refund reconciliation via bag-drop facilities) has been discussed in previous sections and is commonly established for participants (e.g., Material Consolidation Facility, consumer, retailer) of the container return scheme to ensure that any matters can be raised with the Managing Agency for consideration and where required review and remedy. Further, official scheme websites, managing agencies, or the relevant government departments will have online information for the process to manage disputes, commonly through a portal access system for producers, retailers, processors and/or re-processors through to online and phone contact information for consumers. Consequently, the establishment of a suitable dispute resolution process for the NZ CRS design will be important to ensure scheme participants have a formal process in the event of any disputes that may arise during the course of the scheme term or through specific contractual arrangements.

While it is not the intent of this section to repeat previously discussed information, the New South Wales container return scheme case study is provided below to illustrate the resolution method employed in the event of a dispute or disputes between scheme participants.

### 14.5.1 New South Wales Case Study

In New South Wales, Material Recovery Facilities (MRF) must carry out verification audits of container samples to provide the Scheme Coordinator (i.e., Managing Agency) with assurance that approved sampling protocols have been adhered to and processing refund claims are accurate<sup>953</sup>. Where there are disagreements between the MRF operator and the Scheme Coordinator (i.e., Managing Agency) and after discussion these remain unresolved, either party has the opportunity to give written notice requiring that the disagreement or dispute be managed through mediation. Where mediation does not resolve the dispute, a further process can be activated by either party to require independent expert determination with the costs of engaging the expert to be shared by both parties. Unfortunately, no case study examples were available in print at the time of writing.

<sup>953</sup> Material Recovery Facility Processing Refund Protocol: Sampling Strategy. November 2017



In addition, the New South Wales Government has established a 'Common Dispute Deed' between the Scheme Coordinator (Exchange for Change (NSW) Pty Ltd) (i.e., Managing Agency), the network operator (TOMRA Cleanaway Pty Limited) and all other parties that delivered an 'Accession Deed Poll'<sup>954,955</sup>. Briefly, the 'Common Dispute Deed'<sup>956</sup> dispute resolution procedure includes the following dispute resolution components, but the Deed should be consulted for further specific information:

- A 7-day time period for a senior representative from each party to meet and use all reasonable endeavours, acting in good faith, to resolve the dispute by joint discussions.
- Compliance with the dispute resolution procedures is a condition precedent to any entitlement of a claim relief or remedy.
- The party's obligations under the specific contractual arrangements will continue despite the existence of a common dispute between some or all of the parties.
- If the common dispute is not resolved within 20-days after the issue of the notification, the common dispute will be referred to expert determination.
- An expert determination is not arbitration and the expert is not a mediator. The expert may reach a decision from his or her own knowledge and expertise.
- Each scheme participant involved in the dispute process will bear its own costs of participating in the dispute resolution process.

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*Typically, most global container return scheme Managing Agencies are required by legislation to report on the operation and performance of the scheme including audited financial statements for the specific fiscal year through reports such as Annual Reports and/or Annual Sustainability Reports.*

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## 14.6 Scheme Administration

The role of the Managing Agency in administering a container return scheme has been discussed throughout previous sections, which has shown that the schemes design has a significant degree of influence on the roles and responsibilities of the Managing Agency in scheme administration. For clarity, scheme administration is the oversight and control of the scheme as opposed to the physical service delivery by Network Operators, contractors, suppliers and the like.

In many global container return schemes, previously discussed, the role and responsibility of the Managing Agency is commonly defined during the scheme design stage and influenced by factors such as jurisdictional legislation, local and central government requirements.

As reported by the Organisation for Economic Co-operation and Development (OECD)<sup>957</sup>, there is no 'right' or 'wrong' approach to designing container return schemes. However, the OECD does note several key factors which have applicability to the establishment of the scheme administration role for the Managing Agency, including:

- Clear definition of scheme objectives and scope;
- Ensure consistency with related policies;
- Clear definition of the producer;
- Communication and engagement with stakeholders;
- Implementation of robust and transparent reporting and monitoring; and
- Implementation of compliance and/or enforcement mechanisms.

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<sup>954</sup> Accession Deed Poll – The Supplier seeks to enter into a supply arrangement with the Scheme Coordinator for the purpose of section 38 of the Waste Avoidance and Resource Recovery Act 2001 (NSW)

<sup>955</sup> <https://exchangeforchange.com.au/supplier-contributions/resources/>

<sup>956</sup> NSW Container Deposit Scheme: Common Dispute Deed

<sup>957</sup> Extended Producer Responsibility: Updated Guidance for Efficient Waste Management, OECD 2016, OECD Publishing, Paris

Therefore, considering the NZ CRS design, a Managing Agency that is structured as a single, independent and not-for-profit organisation is anticipated to be best placed to manage the day-to-day administration of the scheme. The benefit of this approach is that scheme participants will engage with a single Managing Agency supported by consistent messaging (e.g., communication and engagement, consistent reporting requirements) and supporting scheme information.

## 14.7 Reporting

Reporting of container return scheme information is a critical scheme design component that ensures transparency for scheme participants, including consumers, retailers, producers, container return facilities, material processors and local and central government. Typically, most global container return scheme Managing Agencies are required by legislation to report on the operation and performance of the scheme including audited financial statements for the specific fiscal year through reports such as Annual Reports and/or Annual Sustainability Reports.

The following sections provide case study examples of the reporting mechanisms employed in both the Queensland and Alberta container return schemes.

The importance of scheme reporting in the design of a NZ CRS cannot be understated for all scheme participants, as it is the responsibility of all participants, including the Managing Agency, to ensure the scheme is consumer focussed, strives to make the scheme as cost efficient as possible and reports against the schemes social, economic, cultural and environmental strategic objectives. To achieve this, the bespoke NZ CRS legislative instrument needs to clearly set out the reporting requirements for both the Managing Agency so that both can be held accountable for the ultimate success of the scheme. As a result of the bespoke legislative instrument, the NZ CRS Managing Agency will also establish robust and transparent reporting processes and procedures to, for example, measure key performance indicators and provide transparency to consumers regarding performance of the scheme.

### 14.7.1 Queensland Case Study

As discussed in previous sections, Container Exchange (COEX) (i.e., Managing Agency) is the not-for-profit organisation appointed by the Queensland Government to run the Containers for Change container return scheme in Queensland. As in all global container return schemes, the role of the Managing Agency is critically important to the operation and performance of the scheme, but it must also report on the performance of the scheme to ensure transparency of information to scheme participants as well as providing visibility on the success or otherwise of meeting contractual obligations (e.g., key performance indicators).

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*The role and responsibility of the Managing Agency is commonly defined during the scheme design stage and influenced by factors such as jurisdictional legislation, local and central government requirements and extended producer responsibility requirements.*

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To maintain visibility and transparency of information, COEX publishes publicly available Annual Reports which includes an annual measure of the following high-level areas:

- The performance of the scheme (e.g., containers redeemed, deposits refunded to consumers, number of charities supported, audit and risk reporting);
- Financial performance (e.g., financial transactions to scheme participants including material processors, material recovery facilities and councils);
- Public awareness (e.g., public engagement and scheme awareness);
- Safety, efficiency and sustainability (e.g., notifiable incidents);
- Industry collaboration; and
- Governance.

Within the Annual Report<sup>958</sup>, COEX provides summary information relating to scheme financials which is supported by internal reporting processes and data analysis undertaken using 'Power BI (Power Business Intelligence)'. This software as reported by COEX enables contract managers to view data such as volumes, material type and payment types to assess performance of any of the container return facility locations, which in turn enables COEX to manage scheme performance and implement measures to improve performance if inefficiencies are identified. In addition to Power BI providing reports on individual container return facilities, it is also used by COEX to provide regular scheme wide performance snapshots assessed against strategic targets which are provided to the Governance Board and government to meet the scheme reporting requirements, including:

- Minister for the Environment;
- Department of Environment and Science;
- Office of the Minister for the Environment and the Great Barrier Reef;
- Minister for the Arts.

Additionally, COEX employs an Audit and Risk programme guided by an Audit Charter, the development of which was supported by KPMG to establish best practice procedures for COEX's internal audit functions. The applicability of the Audit and Risk programme is particularly relevant to audits carried out on the quarterly scheme claims from Material Recovery Facilities<sup>959</sup>.

In addition to the Annual Report, COEX also provides scheme information as published on the Container Exchange website<sup>960</sup> as well as more detailed information published on the Containers for Change<sup>961</sup> website which provides a platform to access readily available information and engage with the scheme.

However, in addition, COEX may also undertakes internal reporting as per contractual arrangements with each of the scheme participants to ensure that obligations are being met, and, where these are not and/or are non-compliant, remedial measures are put in place and reported on. Examples of these internal reports were not available at the time of writing possibly due to the confidential nature of these reports as per the specific contractual arrangement.

### 14.7.2 Alberta Case Study

The Alberta container return scheme Managing Agency (Alberta Beverage Container Recycling Corporation [ABCRC]) operates in a regulatory system that requires annual reporting to Alberta's Government. This Annual Report<sup>962</sup> takes the form of a publicly available Sustainability Report which is separated into four (4) distinct sections to reflect the organisations environmental stewardship principles, comprising:

- Environmental Stewardship;
- Social Stewardship;
- Economic Stewardship; and
- Financial Stewardship.

Each of the above components comprises detailed information for the previous financial year period to provide clarity on the scheme operation and performance as well as any innovations or social initiatives carried out or supported by the scheme. The following list provides a high-level summary of the various information components included under each of the four (4) sections:

- Environmental Stewardship

<sup>958</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>959</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>960</sup> <https://www.containerexchange.com.au/>

<sup>961</sup> <https://www.containersforchange.com.au/qld>

<sup>962</sup> Alberta Beverage Container Recycling Corporation Annual Sustainability Report 2018

- Scheme material usage (e.g., pallets, strapping, paper);
- Resource consumption (e.g., water, electricity, natural gas, diesel fuel);
- Transportation of products from depots to ABCRC facilities;
- Carbon footprint (e.g., director and employee information regarding air travel, rental cars, taxis, bus, personal vehicles);
- Transportation of products from ABCRC facilities to commodity markets (e.g., distances travelled); and
- Materials recycled (e.g., material, customer, type of recycling).
- Social Stewardship
  - Health and safety;
  - Total workforce (e.g., location, contract type [permanent/temporary], workforce numbers);
  - Cultural diversity;
  - Depot satisfaction survey results;
  - Marketing and advertising;
  - Social partnerships (e.g., clothing drive for cerebral palsy, school programmes); and
  - Community champions programme (e.g., grants provided).
- Economic Stewardship
  - Return rate over time (e.g., tracking current and historical return rates);
  - Infrastructure investment (e.g., implementation of new balers);
  - Scheme funds (e.g., unredeemed deposits, sale of processed material, container recycling fee);
  - Scheme costs (e.g., handling commissions, administration, depreciation, marketing and technology, processing, transportation); and
  - Cost per container and consolidated cost per container over time.
- Financial Stewardship
  - Statement of operations and changes in net assets; and
  - Statement of financial position and cash flows.

The information provided to the Alberta Government via the Sustainability Report provides a detailed summary of each of the above components including the audited financial statements for the fiscal year.

Additionally, as reported in Section 14.7.1, a centralised software platform can be used in container return schemes to assess scheme performance. In the case of Alberta, the Enterprise Resource Planning software Microsoft NAV is used across all aspects of ABCRC’s operations including finance, manufacturing, supply chains, analytics, business intelligence and electronic commerce (e-commerce). Additionally, ABCRC reported that implementation of Microsoft NAV enables the incorporation of serialisation into the supply chain with Alberta Depots which added bag-level asset tracking supporting ABCRCs accountability.

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*Scheme innovations in a NZ CRS context provides an opportunity for the Managing Agency to constantly review and actively improve on scheme operations to increase eligible container return rates whilst maximising scheme performance.*

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In addition to the Annual Sustainability Report, the Alberta Beverage Container Recycling Corporation also provides scheme information as published on the website<sup>963</sup> which provides a platform to access readily available information and engage with the scheme.

<sup>963</sup> <https://www.abcrc.com/>

## 14.8 Scheme Innovations

Innovation across the range of global container return schemes is commonly associated with system efficiencies and improving scheme effectiveness, however some schemes have also supported social innovations, including, for example, depot operator marketing toolkits. Where innovations were reported these were typically associated with established schemes that had been in operation for a period of time enabling the Managing Agency to support innovative initiatives. However, newly established schemes may not have had sufficient time to establish and report on innovative initiatives but had in most cases incorporated innovation to some degree in the scheme objectives and/or strategic priorities. It is therefore likely that as these newly established schemes mature, the respective Managing Agency will eventually report on innovative initiatives supported by the scheme.

Scheme innovations in a NZ CRS context provides an opportunity for the Managing Agency to constantly review and actively improve on scheme operations to increase eligible container return rates whilst maximising scheme performance and potentially support the promotion of refillables in Aotearoa New Zealand.

The following sections provide case study examples of several container return schemes where innovations have been reported by the Managing Agency.

### 14.8.1 Alberta Case Study

The following infrastructure and community-based innovations have been reported by the Alberta Beverage Container Recycling Corporation (ABCRC)<sup>964</sup>:

#### 14.8.1.1 Infrastructure Innovations

- Water Effluent Treatment
  - As reported by the Alberta Beverage Container Recycling Corporation (ABCRC), a new wastewater pre-treatment plant was installed at the Calgary ABCRC facility to reduce the corrosiveness and dissolved-metal concentrations that were reported to be a by-product of processing ABCRC beverage containers.
- Implementation of the Enterprise Resource Planning application, Microsoft NAV
  - The software is used across all aspects of ABCRC's operations including finance, manufacturing, supply chains, analytics, business intelligence and electronic commerce (e-commerce). Implementation of Microsoft NAV was reported by ABCRC to enable the incorporation of serialisation into the supply chain with Alberta Depots which added bag-level asset tracking, supporting ABCRCs accountability.
- Upgrade of Balers
  - Efficiency challenges and ongoing maintenance of two (2) 10-year old balers led to ABCRC customising four (4) new balers to include compression doors to hold the material in place before the compression cycle. Each new baler can process up to 90% more scheme mega bags per hour meaning an average of 143,750 more beverage containers are processed by each machine every hour.

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*Innovation across the range of global container return schemes is commonly associated with system efficiencies and improving scheme effectiveness, however some schemes have also supported social innovations, including for example depot operator marketing toolkits.*

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<sup>964</sup> Alberta Beverage Container Recycling Corporation Annual Sustainability Report 2018

### 14.8.1.2 Community Innovations

- Provincial beverage container research and development
  - ABCRC collaborated with the University of Lethbridge business and marketing students to create a best practice marketing toolkit for small-to-medium-sized depot businesses as well as providing branding standards and signage.
- School programmes
  - ABCRC runs a 'Depot school programme' through online interactive resources to help schools take charge of their recycling programmes and manage their container counts as well as win prizes. The ABCRC also provides schools with educational videos and classroom materials to help teachers educate the students on the positive impact recycling and repurposing containers has on the world around them.
- Community champions
  - ABCRC through the schemes Community Champions Grant Programme has supported Vercova (a non-profit charitable trust serving and supporting persons with disabilities) to purchase bag stands and robust plastic bags to transport containers safely. As a partner of the ABCRC Community Champions Programme, Vercova reported it has been able to achieve its goal of hiring people with disabilities as well as raising the profile of Vercova in the community. Additionally, Vercova generates a revenue from the collection of scheme containers to provide programmes and services to persons with disabilities.

## 14.9 The New Zealand Container Return Scheme Managing Agency Organisational Form

As has been discussed throughout previous sections, container return scheme participants (e.g., MCF, Consumer, Retailer) cannot be considered in isolation of one another, as scheme success is underpinned by integrated and inter-connected relationships, coordinated and fostered by a scheme Managing Agency. In Aotearoa New Zealand, the Managing Agency will therefore be tasked with catalysing taupuhipuhi – interdependence and whanaungatanga – relationship across the scheme stakeholders.

To determine the organisational form of the NZ CRS, PwC was commissioned in 2020 to investigate a range of organisational form and governance options for the NZ CRS taking into consideration the NZ CRS research and NZ CRS design objectives. The results of the PwC work and feedback received from the NZ CRS Scheme Design Working Group (SDWG) are discussed below. The NZ CRS Managing Agency organisational form is provided at the end of this section including a list of Managing Agency responsibilities established from the preceding sections (Section 14.9.1). The NZ CRS Managing Agency Governance Board options are discussed further in Section 15. For clarity, Section 14.9 will discuss the NZ CRS Managing Agency organisational form only.

For the purpose of clarity, The NZ CRS Managing Agency and Governance Board is referred to as a single organisation with a clear separation between the management (i.e., operation, performance and executive management) and governance functions (i.e., scheme Governance Board, strategic direction and legislative accountability). Further, the following discussion will, for clarity, separate the Managing Agency operational and performance functions from the Managing Agency Governance functions, but where this is not possible, the text will be reproduced in Section 15 for clarity.

To determine the range of Managing Agency organisational form options, several assumptions were established regarding the roles and responsibilities that underpin the NZ CRS Managing Agency (including the Governance Board):

- The Managing Agency is responsible for overseeing the operation and performance of the NZ CRS;

- The Managing Agency seeks to advance economic, environmental, social and cultural outcomes. Recognising these outcomes do not always complement one another entirely, the agency will seek to find an optimal balance across these dimensions;
- The Managing Agency is a not-for-profit, meaning any surpluses generated in the course of its operations must be reinvested in the objectives of the organisation, and/or reduce scheme fees.
- The Managing Agency is a single agency which oversees the scheme nationwide, rather than comprising multiple organisations;
- The Managing Agency may choose to own and operate elements of the scheme but ordinarily procure these services from the market (e.g., Material Consolidation Facility to consolidate and process eligible scheme containers);
- NZ CRS legislative instruments, Managing Agency constitution and Governance Board charter will provide clarity on the roles, responsibilities and obligations of the Managing Agency;
- The NZ CRS Managing Agency Governance Board will be required to act in the best interests of the entity, including in line with the NZ CRS legislative instrument;
- NZ CRS Managing Agency Governance Board members will be independent – members will have no material investments in the NZ CRS Managing Agency, nor are they employees of organisations closely involved with the NZ CRS (including industry, central or local government) (see Section 15 for further discussion);
- Where NZ CRS Managing Agency members are appointed to represent a group, their duty is to make decisions in the interests of the Managing Agency; and
- Standard roles and responsibilities of the NZ CRS Managing Agency governance function will apply (see Section 14 for further discussion).

Further, the responsibility for the scheme legislative instrument and for oversight of the performance of the NZ CRS is anticipated to fall with central government. While it is not yet confirmed which government department will be responsible for this role, the Manatū Mō Te Taiao - Ministry for the Environment has been included here for the purpose of establishing the NZ CRS organisational form.

As discussed in the introduction to Section 14, the NZ CRS Managing Agency and Governance Board is referred to as a single organisation with clear separation between the management (i.e., operation, performance and executive management) and governance functions (i.e., scheme Governance Board, strategic direction and legislative accountability). It is also important to note here that the findings of the PwC report noted that the majority of Governance Board members are to be independent, that is that they have no material interests in the Managing Agency nor are they employees of organisations closely involved with the scheme (including industry, central or local government). Where members are appointed to represent a group, their duty is to make decisions in the interests of the Managing Agency. It should be noted that the 'appointment' of directors to the NZ CRS Governance Board does not mean that the government has any greater or lesser control of the scheme Managing Agency than if it has 'approved' the Governance Board members. Any control by the government is via the bespoke scheme legislation and provisions within this to intervene with appropriate measures, should that be required. These measures could include, for example, replacing one (1) or more Governance Board members.

Figure 55 below illustrates the high-level schematic of the NZ CRS and the broad components of the Managing Agency comprising:

- The Managing Agency Governance Board
  - To provide strategic direction to the Managing Agency, ensure the NZ CRS delivers on its goals and objectives, compliance with any bespoke NZ CRS legislative instruments and be accountable to the Government of the day and all scheme participants, including the consumer. The Managing Agency Governance Board would employ a Chief executive Officer. The Managing Agency Governance Board would delegate operational matters to the Managing Agency Chief Executive Officer. The Governance Board would comprise

skills, experience and expertise from, but not limited to the interests of, Iwi, recyclers, financial, regulatory, customer, retail, community, waste sector, local government, beverage, experienced strategists and other stakeholders.

- The Managing Agency Executive Management Team led by the Chief Executive Officer
  - Oversees the operation and performance of the NZ CRS, including the Managing Agency Operations Team. The Executive Management Team will comprise, for example, the Chief Executive Officer, Chief Financial Manager, Operations Manager, Marketing and Communications Manager, Sustainability/Environment Manager, Audit and Risk Manager. Additionally, the scheme Managing Agency will be underpinned by strong financial discipline.
- The Managing Agency Operations Team
  - The Managing Agency staff including the 16 Regional Coordinators, to oversee the day-to-day operational activities and help the Managing Agency perform its duties. The Operations Team will be led by a team of operational managers comprising, for example, Logistics Manager, Audit and Compliance Manager, Finance Manager, IT Manager, Communications Manager, Community Engagement Manager, Regional Coordinator Manager. The Operations Team Managers will be accountable to the Executive Management Team.
- 16 Regional Coordinators
  - Aotearoa New Zealand comprises 16 territorial regions (including the Chatham Islands), some of which comprise rural and remote communities. As such, 16 regional coordinators are initially included to provide region specific scheme coordination by providing regions with a local coordinator that can, for example, carry out scheme specific regional activities, quickly respond to and address scheme related matters, liaise with Mana Whenua and interface with local community organisations. The intent of the regional coordinators is to provide the regions with a coordinator that is familiar with the region and who will preferably have an established network of contacts in the respective region to facilitate scheme activities including community and consumer engagement. As the scheme matures and approaches 'steady state' the number of regional coordinators is expected to reduce in keeping with ensuring the scheme is cost-effective.

The Figure 55 schematic also illustrates the relationship and interface with central government and the Technical Advisory Group (TAG), with the Managing Agency ultimately providing a service to Aotearoa New Zealand and the consumer:

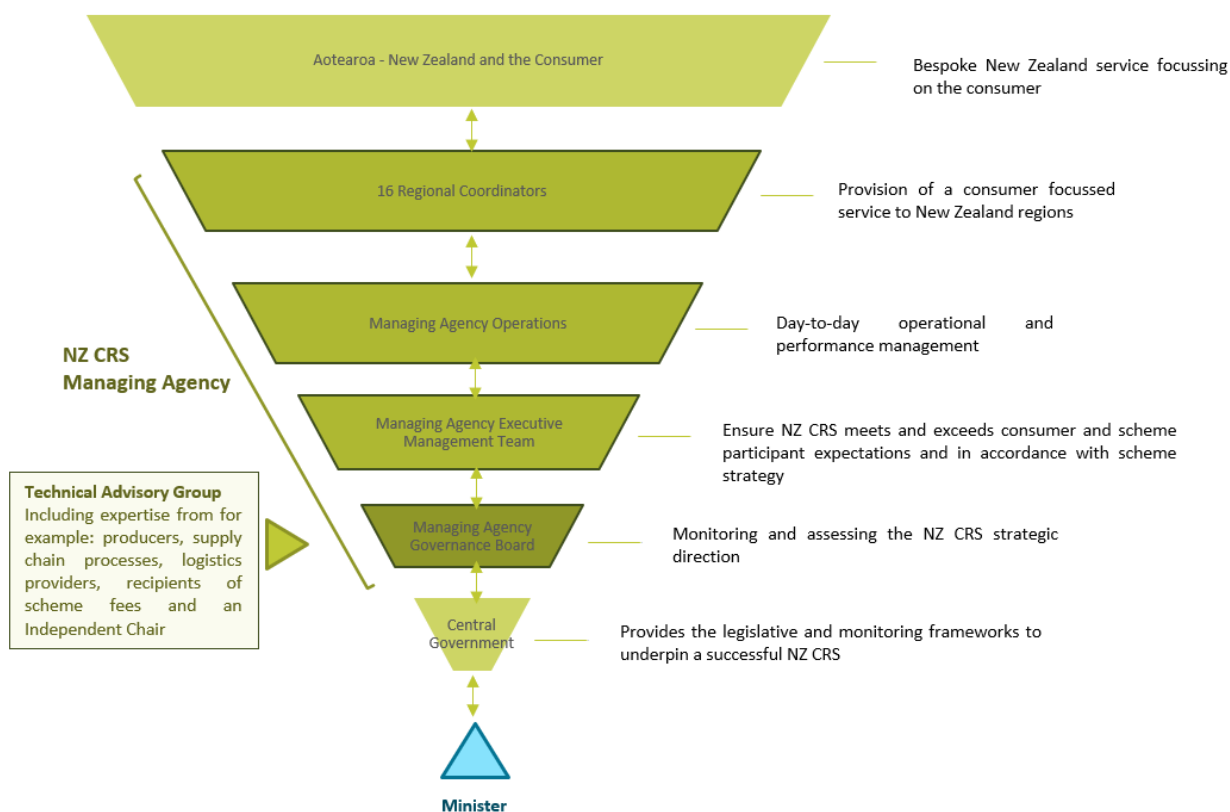
- Central Government
  - Responsible for regulating the NZ CRS, overseeing and monitoring the schemes performance. Central Government will also be responsible for ensuring the NZ CRS Governance Board delivers on its goals and objectives, complies with any bespoke NZ CRS legislative instruments, and is accountable to the Government of the day, and all scheme participants, including the consumer.
- Aotearoa New Zealand and the Consumer
  - To engage with the NZ CRS and hold the NZ CRS Managing Agency, accountable for providing a service that includes, but is not limited to, a convenient and accessible service and one that engages and encourages active consumer participation. Community and/or consumer interests are core to the NZ CRS and it is considered critically important for the NZ CRS Managing Agency to ensure regular and open dialogue with the community and consumers as a key function of the Managing Agency. The reasons for this include the ability for the Managing Agency operational team and



regional coordinators to more effectively engage with the community and/or consumer through day-to-day activities of the scheme.

- Technical Advisory Group (TAG)
  - The inclusion of a TAG is in alignment with the Manatū Mō Te Taiao - Ministry for the Environment General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020 and any further detailed documentation established thereafter. Acknowledging the breadth and depth of knowledge and experience from across a wide range of Aotearoa New Zealand sectors that would be beneficial to support the operation and performance of the NZ CRS.

A Technical Advisory Group has been included to provide advice to the Managing Agency Governance Board (see Section 15 for further discussion).



**Figure 55: Schematic illustrating the broad structure and relationships of the New Zealand Container Return Scheme Managing Agency Organisation**

To determine the NZ CRS Managing Agency organisational form, PwC took the findings of the NZ CRS design components, Australian container return scheme survey summary findings<sup>965</sup> and PwC expertise and knowledge of organisational form and governance, and identified three (3) options for consideration:

- Company;
- Charitable Trust; and
- Incorporated Society.

<sup>965</sup> Survey of Australian Container return Schemes, 2020. New Zealand Container Return Scheme confidential survey

Table 29 provides a high-level summary of the features and implications of each of the three (3) organisational form options considered by PwC<sup>966</sup>.

**Table 29: Preliminary organisational form options for the New Zealand Container Return Scheme Managing Agency<sup>967</sup>**

Overview	Governing Rules	Restrictions Regarding Surpluses	Tax Implications	Comments
<b>Company</b>				
Benefits of this option include a clear constitutional framework and ability to support not-for-profit objectives. However, alternative forms are more aligned to the organisational mandate and may generate tax advantages.				
A company, in a legal sense, is separate from the people who own it. Directors are in charge of the company and are responsible for ensuring the company meets its statutory obligations. Shareholders have an ownership stake in the company. A company may seek to generate a profit. Conversely it can also be a not-for-profit.	A company typically has a clear and established constitution which sets out the rights, powers and duties of the company, its Board, each director and shareholders.	A company's shareholders are typically entitled to a dividend which is a share in the company's profits. A company's constitution can be drafted to specify where surpluses should be directed.	Company profits are taxed at the company tax rate of 28%.	A company is the most common organisational form adopted by Australian container return schemes.
<b>Charitable Trust</b>				
This option has a strong governing framework, the form is consistent with the Managing Agency mandate and the option carries possible tax advantages. There is a risk that scheme fees are set at a level which creates surpluses beyond the level of reinvestment necessary to prudently support the objectives of the organisation. Checks and balances will be implemented to avoid this risk, and instead reduce scheme fees if necessary.				
A charitable trust Board can be formed from either trustees or members of an unincorporated society. A charitable trust	The governing rules of trusts are referred to as a trust deed (or constitution if formed from an unincorporated society). Trust	A trust may be profit making but the profits must be channelled back into its charitable purposes and cannot be distributed to	Trusts can be exempt from income tax on all or some of its income.	There are examples of other New Zealand Kaitiakitanga Whakanaonga - Product Stewardship schemes that use

<sup>966</sup> PwC NZ CRS Preliminary Organisational Form and Governance Options 2020

<sup>967</sup> PwC NZ CRS Preliminary Organisational Form and Governance Options 2020

Overview	Governing Rules	Restrictions Regarding Surpluses	Tax Implications	Comments
<p>is a body corporate and therefore has a legal status that is separate from the trustees/members. To gain “charitable” status, the trust must exist principally or exclusively for “purposes of benefit to the community”.</p>	<p>deeds must cover the purposes (i.e. object) of the Trust, the composition of the Board (how many, how they are appointed, tenure, removal), how property of the trust will be controlled and managed by the Board, powers and duties, Board meetings (quorum, notifications), how financial affairs will be managed, how the trust deed can be altered.</p>	<p>settlers (if Trusts) or members (if unincorporated society).</p>		<p>this organisation form, e.g. The Agrecovery Foundation Trust, which provides Aotearoa New Zealand farmers and growers with nationwide programmes for container recycling, drum recovery, and the collection of unwanted or expired chemicals. is a charitable trust. Its trustees represent key areas of the primary sector and local authority.</p>
<p><b>Incorporated Society</b></p> <p>Advantages and disadvantages are similar to Charitable Trust option. However, an incorporated society may be less appropriate for business organisations, particularly as the model can mean all members (rather than just the Board) have the ability to vote on a range of matters.</p>				
<p>An incorporated society is a legally registered group or organisation of at least 15 people formed for reasons other than financial gain. Membership of an incorporated society may change without impacting the society’s identity. This organisational form limits liability of members in the same way as a company limits liability for its shareholders. An incorporated</p>	<p>An incorporated society’s rules must meet the minimum requirements set out in the Incorporated Societies Act 1908, meaning there is certainty and consistency in the way the society is run.</p>	<p>An incorporated society can raise money to help achieve its 'objects', as set out in its rules. It cannot, however, make money to distribute to its members.</p>	<p>An incorporated society may be entitled to an income tax exemption.</p>	<p>Typically, less well suited to a business-like organisation. Particularly useful form for an organisation that is likely to be operating for a long period.</p>

Overview	Governing Rules	Restrictions Regarding Surpluses	Tax Implications	Comments
<p>society can be a registered charity. With an incorporated society, decisions are made by all members in accordance with the constitution (rather than by a smaller number of Trustees, like the Charitable Trust model).</p>				

The outcome of the preliminary organisational form assessment carried out by PwC noted a charitable trust would potentially provide the NZ CRS Managing with an appropriate organisational form. However, feedback received from the TAG noted the differences between a charitable trust and charitable trust board require further consideration:

- A charitable trust is a trust that has charitable purposes, is governed by trustees in accordance with a Trust Deed, assets are held and managed by the trustees, and trustees are directly liable for their actions, although charitable trust deeds often include some level of indemnity.
- A Charitable Trust Board is a separate body that has its own legal entity independent of the trustees of the Charitable Trust.
- A Charitable Trust can choose to register as a Charitable Trust Board. That means it can hold property and enter into contracts in its own name (i.e., the Board as a whole rather than as separate trustees). This is particularly beneficial where there is significant commercial activity and asset holdings, a larger number of trustees and provides trustees (as Board members) better protection from personal liability.

In addition to those organisational form options identified by PwC, the NZ CRS TAG noted the following additional organisational form options:

- Council-Controlled Trading Organisation – if local council was considered the main driver of the NZ CRS (noting that this would not preclude others), including private organisations having a ‘shareholding’. Local council would be required to hold 50% shareholding under the Local Government Act.
- Charitable Company – Feedback received noted that a not-for-profit entity that is engaging in commercial operations in order to deliver its charitable purposes can establish itself as a limited liability company and be registered as a charity. Its constitution must include a clause preventing dividends being distributed to shareholders, who cannot profit personally from the company. A limited liability charitable company structure is particularly suitable for carrying out commercial arrangements such as entering into contracts and borrowing funds while providing the public benefits and taxation benefits of a registered charity. The Board can be elected by shareholders, and all stakeholders – industry, local and central government and others – could be shareholders.

Taking the outcomes of Table 29 above and feedback received from the SDWG and the Technical Advisory Group (TAG), further detailed assessment to confirm the most appropriate Managing Agency organisational form option is recommended to be carried out during the NZ CRS implementation stage, including for example, a weighted attribute criteria and scoring methodology of the range of options to then evaluate and determine the preferred option for a consumer focussed NZ CRS.

Further, broad feedback received noted that the NZ CRS Managing Agency organisational form should reflect the aims and objectives of the NZ CRS, which as discussed in Section 1 are as follows:

1. Change the way Aotearoa New Zealand values beverage containers that will see increased hangarua - recycling and new opportunities for refilling;
2. Reduce the volume of plastics and other container litter currently ending up in our streams (i.e., awa – waterways), moana - marine environment, wāhi tūmatanui - public spaces and ruapara - landfills; and
3. Give effect to ōhanga āmiomio - circular economy outcomes and any future priority product guidelines.

In addition to the above three (3) aims and objectives, the NZ CRS is to where possible give effect to the following key guiding design principles:

- Make it easy and convenient to return containers across Aotearoa New Zealand;
- A solution that is cost effective and efficient;
- Improve the quality and marketability of recyclables and assess the impact of the NZ CRS design on current kerbside and other collection and processing systems;
- Create new opportunities for employment, community participation and fund-raising for charities and social enterprises.
- Use technology and innovations to optimise performance of the NZ CRS;
- Support greater investment in remanufacturing and regional development;
- Align objectives with Te Tiriti o Waitangi – The Treaty of Waitangi and Te Ao Māori; and
- Where able mitigate climate change.

Further, the NZ CRS Managing Agency organisational form must also have regard to the appropriate legislative instruments (e.g., WMA 2008) which provide the foundation to establish, mandate and govern Kaitiakitanga Whakanaonga - Product Stewardship schemes (refer Section 13 for further discussion).

As such, while further investigation is required to determine the preferred Managing Agency organisational form (see Section 18), the preferred option needs to be guided by and reflect the above scheme aims and objectives to ensure the structure best reflects the needs of Aotearoa – New Zealand and ultimately the consumer.

### **14.9.1 New Zealand Container Return Scheme Managing Agency Operational and Executive Management Team Structure and Responsibilities**

Taking into consideration the available global container return scheme information and acknowledging the importance and significance of the NZ CRS Managing Agency in delivering the ongoing operation and performance of a scheme, it is important at this stage in the report to provide a summary of the standard roles and responsibilities of the Managing Agency<sup>968</sup>:

- Aligning and upholding the principles of Te Tiriti o Waitangi;
- Establishment of the Managing Agency Governance Board;
- Recruitment of the Managing Agency Chief Executive Officer;

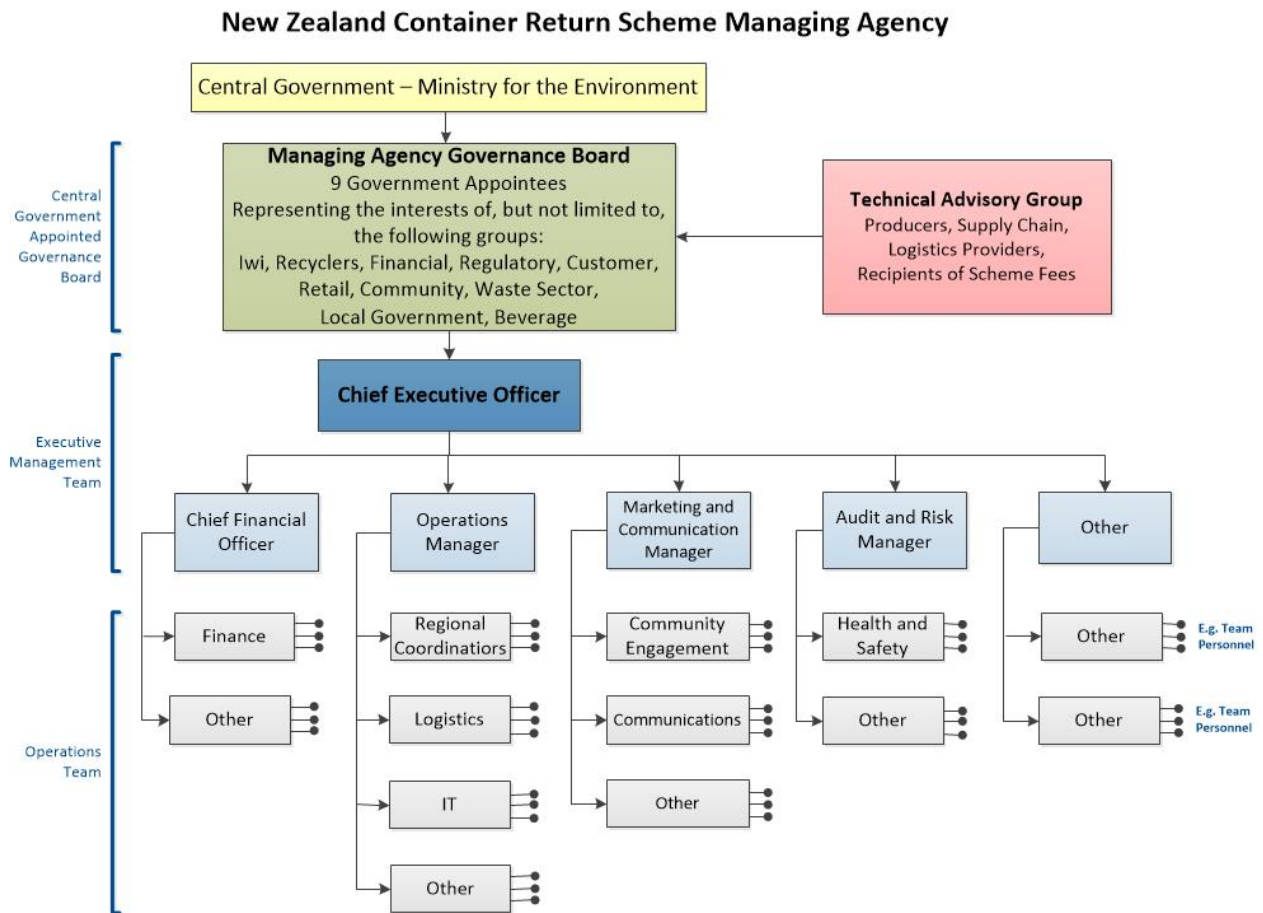
<sup>968</sup> PwC NZ CRS Preliminary Organisational Form and Governance Options 2020

- Implementation of the strategic direction set by the Managing Agency Governance Board;
- Ensuring the scheme delivers on its goals and objectives;
- Compliance with any bespoke NZ CRS legislative instruments;
- Recruitment of the Managing Agency Executive Management Team and supporting staff;
- The day to day operation and performance of the NZ CRS;
- Budget, performance and control (the NZ CRS scheme objectives will be enshrined in the bespoke legislative instrument to inform the scheme budget with control provided for in the legislative instrument and Governance Board oversight [i.e., the Minister will not influence and/or approve the scheme budget and the Government will not be able to access and use the Managing Agency funds]);
- Accountability to the Government of the day;
- Accountability to all NZ CRS scheme participants, including the consumer; and
- Accountability for continuous advancement of the NZ CRS.

Further, a synthesis of the responsibilities recommended for the NZ CRS Managing Agency. as presented in previous sections are the result of the Project Team considering the information, giving due consideration to the applicability of the recommendations in the Aotearoa New Zealand context and the objectives of the NZ CRS design process – to design a bespoke New Zealand Container Return Scheme. Additionally, feedback received from the SDWG and TAG has also been used to inform the responsibilities recommended for the NZ CRS Managing Agency. The consolidated NZ CRS Managing Agency list of responsibilities is included in Table 36, Appendix D.

Further, the available global information, results of the preliminary PwC Managing Agency organisational form options analysis and feedback provided from the Scheme Design Working Group (SDWG) supports the establishment of an appropriately structured single, independent not-for-profit Managing Agency supported by a scheme Governance Board, clear mandate for the Managing Agency and a bespoke container return scheme legislative framework. It is also acknowledged that further consideration should be given to several additional organisational form options as noted above by the NZ CRS TAG (Council-Controlled Trading Organisation and Charitable Company) which may require further investigation during the NZ CRS implementation stage (see Section 17). Figure 56 below provides a schematic of an indicative NZ CRS Managing Agency organisational structure which illustrates in more detail the Governance Board, Executive Management Team structure and Operational Team. Noting the indicative organisational structure, further work will be required during the NZ CRS implementation stage to confirm the personnel capabilities required.

Additionally, the NZ CRS legislative framework should set the minimum scheme requirements to provide the Managing Agency with clarity on scheme delivery expectations, for example, as a not-for-profit organisation, any revenues generated are to be reinvested back into the scheme and where surplus is generated that this be managed under specific conditions, to fund scheme initiatives, including community activities and scheme infrastructure improvements.



**Figure 56: New Zealand Container Return Scheme Managing Agency indicative organisational structure**

While Table 36, Appendix D consolidates the recommended responsibilities of the Managing Agency, it should be acknowledged that the implementation of a NZ CRS design will require alignment with existing legislative frameworks such as the New Zealand Waste Minimisation Act 2008 and the principles of Te Tiriti o Waitangi – The Treaty of Waitangi. Further, the scheme Managing Agency through its constitution (or equivalent) will include a requirement that it will align and uphold the principles of Te Tiriti o Waitangi – The Treaty of Waitangi. The following list provides a broad summary of the Managing Agency responsibilities as reported throughout previous research sections, however Table 36, Appendix D should be consulted for the complete list:

- The Managing Agency will contract the services of the Material Consolidation Facility, to a third party (e.g., an existing registered container return facility);
- The Managing Agency to establish a clear and consistent collection, quality control and auditing processes integrating all scheme participants to maintain material quality;
- Supporting the establishment of a revenue sharing arrangement (deposit or handling fee amount, including a transitional period) underpinned by clear guidelines (e.g., the default position could have the deposit shared 50/50 between both parties making sure no party is disadvantaged nor gains a windfall from the NZ CRS with any surplus returned to the ratepayer) between the local council and the MRF for eligible containers collected via kerbside recycling collections. It is recommended each Territorial Local Authority and MRF operator undertake their own negotiations (excluding the involvement of the Managing Agency) and reach agreement on revenue sharing as this recognises the different contractual arrangements that exist across NZ. It is also recommended that local authorities use the opportunity of recognising revenue from containers in the recycling bin to offset recycling collection costs incurred by ratepayers (e.g., realising savings through tendering, including, for example, greater collections

per unit truck and recognition of these savings as a variable on rate payers). The reason for this is to incentivise the MRF operator to make all appropriate efforts to separate out eligible and redeem containers (in accordance with the scheme container acceptance criteria).

Notwithstanding any contractual requirements between MRF operators and local councils it is recommended that a revenue sharing arrangement be established between the local council and the MRF. The revenue sharing arrangement is to be established and set at a level that will support kerbside recycling and incentivise the MRF to fund processing and maximise recovery of eligible containers;

- It is recommended that further detailed analysis is undertaken to determine if the revenue sharing is based on the deposit value or the handling fee, but not both. The detailed analysis would be undertaken to reflect the different collection types, MRF operations, capital investments and scale of these and financial viability across Aotearoa New Zealand to ensure the revenue sharing is fair and reasonable and does not result in unintended consequences or perverse outcomes for the NZ CRS. The default position would be sharing of the deposit value.
- The Managing Agency controls and/or has full transparency of the end fate of scheme materials (i.e., closed loop system) via contractual relationships or competitive tendering processes with re-processors (e.g., long-term contracts);
- The Managing Agency to determine the scheme costs (e.g., handling fee);
- All eligible beverage containers to be registered with the Managing Agency;
- The Managing Agency provides for a range of options for consumers to receive the deposit refund is provided for (e.g., manual container return facilities, Reverse Vending Machines) in the design of a NZ CRS, including cash, supermarket voucher (including, for example, a 2-year expiration date), donation, electronic funds transfer, other (e.g., scheme credit system, loyalty card, gift card). The scheme Managing Agency is to have flexibility to expand the range of refund options supported by robust information (e.g., consumer surveys) and in consultation with the scheme Governance Board and the Government department responsible with scheme oversight. The Managing Agency to also determine whether container return facilities are to provide all or several options to the consumer;
- The Managing Agency to implement appropriate anti-fraud measures; and
- The Managing Agency will be required to promote and develop the refillables market. Options to achieve this may include, but not be limited to:
  - Investment in, or funding of, infrastructure by addressing barriers such as the return, re-washing and refilling of bottles.
  - Working together with beverage companies to enable the method of return by customers is convenient and accessible.
  - Working together with beverage companies to promote refillables including awareness and education.
  - Working with beverage companies to promote both a universal and bespoke refillable bottle. Universal bottle here refers to a generic bottle that could be used by multiple beverage companies but each with their own unique label.
  - Establishment of NZ CRS container return facilities that can accept, sort and store for transportation both eligible single-use beverage containers and reusable beverage containers.
  - Support and facilitate the uptake of reusables through the integration of strategic directives embedded within the NZ CRS scheme performance indicators.

Where appropriate, the NZ CRS may also require legislative change, for example, bespoke legislative instruments, to allow for the effective implementation of the NZ CRS, but any such change will be the decision of and at the discretion of the New Zealand Government.



It is also acknowledged that central government (i.e., the Manatū Mō Te Taiao - Ministry for the Environment) has an important role in the success of the NZ CRS alongside the scheme Managing Agency. While the complete list of government responsibilities will be determined during the NZ CRS implementation stage, the following list provides several key areas where the government will have a pivotal role:

- Determining the deposit amount.
- Development of the bespoke NZ CRS legislative instrument (the NZ CRS legislative instrument will not stipulate by name any individual and/or organisation who will be a member of the scheme Managing Agency and/or Governance Board).
- Appointment of the Managing Agency Governance Board members.
- Undertake scheme reviews and hold the Managing Agency Governance Board accountable.

Further, we acknowledge feedback received suggesting that the NZ CRS would benefit from closer alignment with the Australian schemes, particularly the Queensland container return scheme. However, it is important to reiterate here that the intent of the NZ CRS Design process was 'to develop the best scheme based on best international practice and that is bespoke to Aotearoa New Zealand and developed in alignment with social, cultural, economic and environmental scheme outcomes.' For the purpose of clarity and to distinguish the NZ CRS Design from the Queensland scheme, it is important to note here the following differences which will also be discussed in Section 15:

### Governance Board

The Governance Board make-up will be a diverse group of people based on the skills, experience and expertise they bring and will represent, as a minimum the following areas:

- 9-government appointed members (including an Independent Board Chair and representation from, but not limited to, the interests of, Iwi, recyclers, financial, regulatory, customer, retail, community, waste sector, local government, beverage, experienced strategists and other stakeholders as well as the Managing Agency Chief Executive Officer) and be aligned to the representation of the Te Tai Ōhanga – The Treasury Living Standards Framework (i.e., Natural Capital, Social Capital, Human Capital and Financial/Physical Capital), including upholding Te Tiriti o Waitangi – The Treaty of Waitangi. Central government will appoint the scheme Governance Board with control applied through appropriate legislative frameworks.

The NZ CRS Governance Board make-up differs to the strong beverage producer representation as seen in the Queensland container return scheme to ensure the NZ CRS benefits from a diverse range of skills and experience. Further, under the Queensland container return scheme, Board members are approved by the Government.

Therefore, the government appointment of NZ CRS Governance Board members gives greater empowerment and responsibility to the government of the day to ensure the make-up of the Board reflects the current and future needs of Aotearoa New Zealand. It should be noted that the 'appointment' of directors to the NZ CRS Governance Board does not mean that the government has any greater or lesser control of the scheme Managing Agency than if it has 'approved' the Governance Board members. Any control by the government is via the bespoke scheme legislation and provisions within this to intervene with appropriate measures, should that be required. These measures could include, for example, replacing one (1) or more Governance Board members.

### Legislation

As has been discussed throughout previous sections, it is acknowledged that a bespoke NZ CRS legislative instrument is anticipated to support the establishment, operation and ultimate success of the

scheme. Compared with the Queensland container return scheme, the NZ CRS legislative instrument will:

- Clearly define roles and responsibilities of the board and government.
- Require greater transparency of information than what has been required or reported in the Queensland scheme.
- Stipulate the consequences for the Board not delivering on targets including, for example, the appointment of independent commissioners and or replacing Board members. While the Queensland scheme enables the government to 'dismiss' the scheme operator for not achieving the minimum target of 85% in practice, it is acknowledged that this will not be applied given the difficulty to effectively appoint and establish an alternative scheme operator.
- Align and uphold the principles of Te Tiriti o Waitangi – The Treaty of Waitangi.
- The NZ CRS legislative instrument will not stipulate by name any individual and/or organisation who will be a member of the scheme Managing Agency and/or Governance Board.

### Transparency

Transparency of information is a critical component in a successful scheme and applies to all scheme participants, including the consumer. As such, and in comparison, to the Queensland container return scheme, the NZ CRS will provide greater transparency to the consumer purchasing scheme eligible beverage containers – in keeping with the findings of the ConsumerNZ survey (see Section 6). Additionally, the NZ CRS will also openly communicate scheme performance data such as monthly container sales and container return rates commencing from day one (1) of the scheme (i.e., scheme 'go-live' date).

### Scheme Performance

A critical element in the design of the NZ CRS is ensuring that the scheme Managing Agency and Governance Board maximise the scheme performance by consistently working to maximise container return rates in keeping with the key outcomes of the NZ CRS design and as stipulated in the bespoke NZ CRS legislative instrument. Therefore, there must not be a commercial incentive that restrains the scheme from doing better than it could be to drive or promote high container return rates (i.e., a scheme that has lower container return rates and is not overly successful). To emphasize this point and using the NZ CRS NZD10-cent and NZD20-cent deposit level and assuming a 1% scheme underperformance, the savings to the beverage producer are approximately:

- Under a NZD10-cent deposit, for every 1% of scheme underperformance the beverage producer saves approximately NZD\$4.7million.
- Under a NZD20-cent deposit, for every 1% of scheme underperformance the beverage producer saves approximately NZD\$7.0million.

For these reasons the NZ CRS Governance Board must be free of this conflict and focused on what is best for Aotearoa New Zealand. This requires wide representation of stakeholders as described above.

## 14.9.2 Aotearoa New Zealand Container Return Scheme Managing Agency Procurement of Collection, Transportation and Processing Services

Central to the NZ CRS providing a customer focussed service is the provision of services for the collection (i.e., container return facilities), movement (i.e., transportation and logistics) and processing (i.e., Material Consolidation Facilities) of eligible scheme containers. Critical to ensuring the establishment of these services is the scheme Managing Agency through robust procurement and probity processes ensuring a competitive and transparent process is provided while ensuring equality amongst potential service providers.

While the specific details of the procurement and probity processes are to be established during the NZ CRS implementation stage, the Establishment Governance Board and the interim Managing Agency Chief Executive are expected to ultimately approve the processes in alignment with any central government requirements. The outcomes of the procurement process will be a series of contractual arrangements, including commercial contracts, licencing and registration agreements.

Further, it is recognised that a NZ CRS will be a new scheme to Aotearoa New Zealand and one that may present significant opportunities to market sectors not traditionally involved in whakahaere rauemi - resource management. Acknowledging these unique attributes, a bespoke procurement process will be established for the NZ CRS, broadly comprising both informal and formal engagement with the market:

- Informal market engagement
  - Stimulate interest in the market in advance of any formal procurement process to ensure, for example, the market is aware of the opportunities presented by the NZ CRS and to canvas a wide range of potential service providers.
- Formal market engagement
  - Implementation of a formal procurement and probity process.

The process of informal market engagement is a vital element in ensuring the market is aware of, in the first instance, the NZ CRS and the objectives of the scheme, the commercial opportunities and the expectations (e.g., alignment with social, cultural, economic and environmental scheme outcomes) of becoming a provider of services to the NZ CRS. To achieve this, the process of informal engagement will be facilitated through a range of measures, including but not limited to media campaigns and a national road show to promote and attract interest from providers of scheme services, including:

- Container return facilities;
- Transportation and logistics; and
- Material Consolidation Facilities.

The intent of a media campaign and national road show is to directly engage with the market by showcasing the NZ CRS and the opportunities presented via the procurement of scheme services, including, but not limited to, the following sectors/organisations:

- Community groups;
- Charities;
- Social enterprises;
- Large and small business;
- Hospitality including restaurants, bars, cafés;
- Large and small retailers;
- Shopping centres;
- Transport and logistics;
- Waste companies;
- Material recycling facility operators;
- Councils; and
- Other.

While the details of the road show will be determined during the NZ CRS implementation stage additional measures such as, huis and community events to enable engagement with a wide range of stakeholders and potential service providers may also be undertaken during the NZ CRS implementation stage. Further, it is also acknowledged that there may be interest from international organisations with relevant experience and capabilities in delivering the required services which may be facilitated through online media platforms.

The process of formal market engagement will follow completion of any informal engagement and is expected to occur via an open, fair, equitable and competitive market tender process (e.g., New Zealand Government Procurement Guidelines<sup>969</sup>) across all of Aotearoa New Zealand. To enable providers of services the greatest opportunity to engage with the NZ CRS procurement process, a staged approach will be developed during the NZ CRS implementation stage:

- Expressions of Interest (EOI) (sometimes referred to as a Request for Offers of Interest or ROI)
  - Used to test the market capability to supply the services as required.

Depending upon the response to the EOI/ROI, the scheme Managing Agency may decide to procure via the following procurement mechanisms:

- Request for Proposal (RFP)
  - To be used when the scheme Managing Agency is seeking a proposal from the market based on projected versus actual data and a variable outcome (e.g., Regional response to establishing a collection point system for eligible scheme materials).
- Request for Tender (RFT)
  - Used when the scheme Managing Agency has sufficient data and known outcomes that they want delivered e.g. transportation of eligible scheme materials from A to B.
- Invited applications
  - Similar to a closed tender where the market response is restricted due to limited availability or speciality resulting in a direct invite to bid.
- Direct appointment
  - Used where the scheme Managing Agency can award a service for the benefit of the NZ CRS without an open tender process, for example, registering a particular charity group to operate container return points within a particular region.
- Combination of the above

As such, the method of procuring services is an important component in ensuring the NZ CRS benefits from a market that is aware of the scheme and the opportunities, is engaged with the procurement process and are active participants in a formal procurement process.

### 14.10 Summary of Key Findings

The outcomes of the above research show that the scheme Managing Agency provides a pivotal role in the ultimate success of a container return schemes operation and performance. Commonly, the Managing Agency is required to deliver a consistent consumer focussed scheme, striving to make the scheme as cost efficient as possible, whilst continually improving on, and reporting against, the schemes social, economic, cultural and environmental strategic objectives – a common requirement of prescribed container return scheme regulations.

The operation and functioning of most container return schemes involve roles for government, producers, retailers, consumers, material processors and material re-processors, but the degree of influence of each of these groups is typically dependent on the governance arrangements responsibilities assigned to the Managing Agency. In most global container return schemes, it is the beverage producer that is responsible for establishing, operating and managing the scheme Managing Agency which may be a collaboration between multiple beverage producers (i.e., beverage brands) and in most cases, formed as a not-for-profit organisation. It is also acknowledged that many schemes involve the participation of retail representatives which operate the network of container return facilities. In such cases, the number of beverage producer representatives may be related to their respective market share, with, for example, greater market share equating to a greater number of representatives on the Managing Agency.

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<sup>969</sup> <https://www.procurement.govt.nz/>

Commonly, the Managing Agency is structured to include an Executive Management Team comprising senior managers from, for example, finance, marketing, logistics, legal, risk and audit, operations and the Chief Executive Officer who are directly responsible for the operation and management of the scheme. The Executive Management Team is typically supported by a wider team of individuals employed by the Managing Agency to carry out the day-to-day functions of the Managing Agency which may include auditing of container return facilities, tracking eligible container return rates against refunds paid and communicating scheme developments to consumers. The additional function of the Executive Management Team is to provide transparent and robust information to the Governance Board to assist in the strategic management of the scheme. To achieve this, it is generally the Managing Agency Chief Executive Officer that provides the conduit of information through representation on the Governance Board.

Broadly, the research suggests that the ability for consumers and community organisations to actively participate in the day-to-day operations and management of a scheme is limited primarily due to the formation of a predominantly industry led Managing Agencies. However, the research suggests that an Executive Management Team that can liaise with stakeholders, including the consumer and community organisations provides diversity of knowledge, contributing to a customer focussed scheme and continual scheme improvements (e.g., through scheme surveys, direct relationships with community organisations).

The structure and function of a container return scheme Managing Agency is most often prescribed in scheme legislative instruments, which often clearly stipulate the roles and responsibilities of the Managing Agency and its management team.

Taking the above research into consideration, the following Managing Agency conclusions can be drawn:

- Broadly, Managing Agencies can be not-for-profit (typically; e.g., Managing Agencies in British Columbia, Canada are legally obliged to have not-for-profit status), for-profit firms (occasionally) and government agencies (rarely) (Section 14);
- Most global container return schemes operate under a not-for-profit (also referred to as non-profit) model rather than a for-profit model to ensure that scheme revenues are used to support the operation of the scheme (Section 14);
- Commonly, container return scheme Managing Agencies comprise a single organisation to manage the range of eligible scheme material and brands (e.g., collection, transportation and processing), but which may also involve municipalities (i.e., Aotearoa New Zealand local councils) that are responsible for collection and sorting of materials (e.g., collection of eligible scheme material via kerbside recycling services) – this relationship between the Managing Agency and the municipality is also known as ‘shared responsibility’ (Section 14);
- The operation and functioning of most container return schemes involve roles for government, producers, retailers, consumers and material processors and material re-processors, but the degree of influence of each of these groups is typically dependent on the governance arrangements and responsibilities assigned to the Managing Agency (Section 14);
- The structure and governance of the agency responsible for managing a regulated Product Stewardship scheme (i.e., Managing Agency) has been reported by the Manatū Mō Te Taiao - Ministry for the Environment as being typically managed by not-for-profit entities that represent all producers of the specific product group (Section 14.1);
- A profit model applied to the scheme Managing Agency could lead to incentives to increase profitability whilst lowering environmental performance as a means of cost-saving. As such, many global container return schemes employ a not-for-profit (non-profit) model to ensure that scheme revenues are used to support the operation of the scheme (Section 14.1);
- Operation of a not-for-profit scheme is achieved by the Managing Agency generally having to meet specific conditions which may be imposed by the Governance Board and/or required by

- government legislation, which may include the provision of Annual Reports with full financial transparency of the scheme and requirements to reinvest any revenues from the sale of material or unredeemed deposits to be put back into the scheme (Section 14.2);
- The roles and responsibilities of Managing Agencies from across the range of global container return schemes is variable depending on the scheme design and specific statutory elements imposed by the respective jurisdictions (Section 14.2);
  - A Managing Agency may be required to manage and deliver all aspects (e.g., financial, marketing, consumer interface, transportation and processing) of the scheme or simply manage and deliver specific components of the scheme (e.g., collection and transportation) which in turn influences the degree of control the Managing Agency has on the performance of the scheme (Section 14.3);
  - There are several common themes which apply to many container return schemes which form the basis of the Managing Agency, particularly where the scheme is a not-for-profit organisation, including (Section 14.3):
    - Clear expectations, including the role and responsibility of the scheme Managing Agency;
    - The scheme is efficient and as low cost as possible;
    - Efficient and convenient return locations for consumers;
    - Transparency and accountability;
    - Promote and maintain beverage container return rates;
    - Continuous scheme improvement;
    - Promote and where possible ensure scheme participants meet their extended producer responsibilities in regard to the eligible scheme containers;
    - Provide opportunities for social enterprise and benefits to community organisations; and
    - Complement existing recycling activities and infrastructure where possible.
  - In most container return schemes, the Managing Agency is responsible for the schemes operation and performance which commonly includes financial and commercial management, operational management, corporate and community relationship management, audit and risk management as well as oversight by a Chief Executive Officer (Section 14.3 and Section 14.4);
  - Schemes establish and implement dispute resolution processes and a consumer complaints processes, for example, including through secure online portal access for scheme participants to phone contacts for consumers ensuring that any matters and/or concerns can be raised with the Managing Agency for consideration and where required review and remedy (Section 14.5);
  - The Managing Agency's role and responsibility in scheme administration involves the oversight and control of the scheme guided by several key factors, including (Section 14.6):
    - Clear definition of scheme objectives and scope;
    - Ensure consistency with related policies;
    - Clear definition of the producer;
    - Communication and engagement with stakeholders;
    - Implementation of robust and transparent reporting and monitoring; and
    - Implementation of compliance and/or enforcement mechanisms.
  - Reporting of container return scheme information ensures transparency for scheme participants, including consumers, retailers, producers, container return facilities, material processors and local and central government (Section 14.7);
  - Most global container return scheme Managing Agencies are required by legislation to report on the operation and performance of the scheme including audited financial statements for the specific fiscal year through reports such as Annual Reports and/or Annual Sustainability Reports (Section 14.7); and

- Innovation across the range of global container return schemes is commonly associated with system efficiencies and improving scheme effectiveness, however some schemes have also supported social innovations, including, for example, depot operator marketing toolkits (Section 14.8).

Considering the NZ CRS design, the structural arrangement of the Managing Agency (e.g., Executive Management Team supported by Regional Coordinators focussed on delivering a consumer focussed service as per the scheme requirements to Aotearoa New Zealand’s regions) and the legal status of the entity (e.g. not-for-profit, charity, private, trust) will be critical elements in the establishment of a container return scheme that is managed by a balanced group of suitably qualified and experienced members. Further, the degree of independence from the Governance Board is a key NZ CRS design element to ensure stakeholders are fairly and equitably represented and importantly the views of New Zealanders are captured and reflected to improve the performance of the scheme to meet and exceed public expectations.

Fundamentally, the mandate of the Managing Agency will be to provide the day-to-day operational and performance management to ensure the scheme meets consumer and scheme participant expectations, as well as regulated requirements. Additionally, the role of the Managing Agency will be to serve all New Zealanders by delivering a successful and continually improving service to consumers. Therefore, a NZ CRS Managing Agency that is structured as an independent, not-for-profit entity comprising, for example, an Executive Management Team including but not limited to, the Chief Executive Officer, Financial Manager, Operating Manager, Marketing and Communications Manager, Audit and Risk Manager, Community and Social Enterprise Manager, Collection Facility Manager and a Mana Whenua Relationship Manager (noting that relationships with Mana Whenua will be interconnected throughout the NZ CRS with the Managing Agency and scheme Governance Board accountable for achieving this) would provide a diverse management team focussed on ensuring the scheme meets and exceeds consumer and scheme participant expectations.

Based on the above research conclusions, Section 14.12 below provides a synthesis of this information in the form of the specific Managing Agency components to be included in the NZ CRS design.

## 14.11 Summary of Design Feedback Received

The following table provides a high-level summary of the feedback received from the Scheme Design Working Group (SDWG) members after reviewing the section information. As many suggestions as possible have been incorporated but the NZ CRS Project Team acknowledge that the wide range of views expressed meant not every edit could be accepted. The NZ CRS Project Team is grateful for those who have provided feedback and where possible these have been used to provide further clarity and context throughout this section and to identify areas requiring further assessment during the NZ CRS implementation stage (Section 17).

Scheme Managing Agency Organisational Form Feedback – High-Level Summary	
Areas for further Investigation	
Who the scheme regulator will be and which central government agency (see Section 15. for further discussion).	Ways to ensure that the structure of the Managing Agency doesn’t have negative impacts on current recycling systems, including those for non-beverage recyclables (see Section 17 for further discussion).
The loans to be provided from Government, including for the tendering process, and the cost-recovery approach (see Section 17 for further discussion).	How to avoid increasing scheme costs, if volumes per collection return facility go down (see Section 17 for further discussion).

Scheme Managing Agency Organisational Form Feedback – High-Level Summary	
What the scheme fee entails (see Section 11 for further discussion).	
<b>Support the Following</b>	
An independent not-for-profit Managing Agency.	The Managing Agency to know anti-competitive law and practices, even if it is a Not-For-Profit, as it will be managing large sums of money.
The Managing Agency CEO and staff not to be connected to a company financially benefiting from the scheme.	The necessity of transparency and probity oversight of the sale of recyclables by the Managing Agency.
Independence of the Governance Board from the Managing Agency, ensuring that the Managing Agency adheres to direction set by the Governance Board.	Scheme targets to be set by a level above and independent of the Managing Agency.
Penalties to be applied if targets are not met.	Legislation and/or regulation to set the roles and responsibilities of the Managing Agency but ensure that the Managing Agency can manage itself and be seen as independent.

## 14.12 Component(s) to be Included in the New Zealand Container Return Scheme Design

The final position on the Managing Agency structural arrangement (e.g., Executive Management Team supported by Regional Coordinators) and its legal status (e.g., not-for-profit, charity, private, trust) will be undertaken during the NZ CRS implementation stage. The Managing Agency structural arrangement has a pivotal role in the ultimate success of the schemes operation and performance to consistently deliver a consumer focussed scheme and strive to make the scheme as cost efficient as possible whilst continually improving on and reporting against the schemes social, economic, cultural and environmental objectives.

Regardless of the Managing Agency structural arrangement accounting for feedback from stakeholders involved in the NZ CRS design, the Project Team are of the view that a key function of the Managing Agency will be to provide the day-to-day operational and performance management to ensure the scheme meets consumer and scheme participant expectations, as well as regulated requirements.

Notwithstanding the Managing Agency structural arrangement, taking the above key findings into account and the NZ CRS design components already reported in previous sections, the Project Team are of the view that the following Managing Agency components will be included in the NZ CRS design:

- The Managing Agency will be established as a single independent, government appointed Governance Board, not-for-profit organisation supported by clear regulatory conditions including consequences for not delivering on the minimum container return rate target of 85% and to strive towards the aspirational container return target of 95% (including the establishment of drivers and levers to achieve the aspirational target such as level of deposit). Consequences include, but are not limited to, the government:
  - Replacing one (1) or more of the scheme Governance Board members; and



- Increasing the level of container deposit (e.g., an increase of 10-cents).
  - The benefit of this approach is the ability for one (1) entity to take responsibility for the operations and performance of the NZ CRS coupled with providing clarity of roles and responsibilities to all scheme participants. Establishing targets for a minimum and an aspirational eligible container return rate means the scheme Managing Agency and scheme Governance Board have set targets against which performance of the scheme can be measured and against which both management (specifically the Managing Agency Chief Executive Officer) and governance functions can be held to account.
- The independent not-for-profit Managing Agency organisation will comprise of an Executive Management Team comprising senior managers of the organisation, including but not limited to, the Chief Executive Officer, Financial Manager, Operating Manager, Marketing and Communications Manager, Sustainability/Environment Manager, Audit and Risk Manager, Community and Social Enterprise Manager, Collection Facility Manager, Mana Whenua Relationship Manager (noting that relationships with Mana Whenua will be interconnected throughout the NZ CRS with the Managing Agency and scheme Governance Board accountable for achieving this).
  - The benefit of this approach is that the operation and performance of the NZ CRS is managed by a dedicated Executive Management Team comprising employees directly involved in the day-to-day operational performance of the scheme. The Executive Management Team representatives will be experienced (e.g. commercial acumen) in and have active working knowledge of all aspects of their respective operational areas, including areas for improvement, any risks and/or opportunities.
- The independent not-for-profit Managing Agency organisation will comprise an Operations Team responsible for fulfilling the day-to-day scheme activities comprising for example, Logistics Manager, Audit and Compliance Manager, Finance Manager, IT Manager, Communications Manager, Community Engagement Manager, Regional Coordinator Manager.
  - The benefit of this approach is that the day-to-day scheme activities are managed by a dedicated Operations Team comprising employees directly involved in fulfilling the duties of the scheme.
- The Managing Agency employees, including the Chief Executive Officer will be independent of any individual or organisation involved with the scheme Governance Board and must not own, be employed by or have any involvement in any organisation that is financially gaining from the NZ CRS. Any family, relatives, etc that are employed by the scheme Managing Agency and where such relationships exist must be fully disclosed and approved by the scheme Governance Board and not at the discretion of the Managing Agency Chief Executive Officer to approve.
  - Establishment of independence between the Management and Governance functions of the Managing Agency will ensure avoidance of any undue influence by a vested interest and confidence that information available to the Managing Agency is held in confidence for the purposes of operating the NZ CRS only.
- Full transparent tender processes with probity oversight to be in place for all Managing Agency procurement processes, for example, the access to the sale of recyclable scheme material.
  - Ensuring robust procurement and probity processes are in place will ensure the Managing Agency will undertake procurement activities in an open and fair environment to ensure all potential suppliers are given impartial and equitable treatment.
- Acknowledging the potential make-up of the Managing Agency, clear processes will be established to manage and protect all commercial information and/or data that is confidential and/or sensitive to competitors market activities.

- Establishment of a clear process and or individual employee contracts specifically restricting the use of commercial and/or sensitive information and/or data will ensure scheme participants have confidence that commercially sensitive information will be used for scheme purposes only.
- The specific container return scheme legislative instruments to set a minimum 85% eligible scheme container return rate target and an aspirational eligible scheme container return rate target of 95% (including the establishment of drivers to achieve the aspirational target) against which the Managing Agency scheme performance will be held accountable.
  - Establishing targets for a minimum and an aspirational eligible container return rate means the scheme Managing Agency has set targets against which performance of the scheme can be measured and held to account.
- The specific container return scheme legislative instruments to set a minimum eligible container return rate of 85% target is applied to the NZ CRS with interim annual container return minimum targets (set at the anniversary date of the NZ CRS) of 60%-year-1 (12-months), 65%-year-2 (24-months), 70%-year-3 (36-months), 80%-year-4 (48-months), 85%-year-5 (60-months) set for the first five (5) years of scheme operation.
  - The benefit of this approach is to acknowledge the build-up period from scheme start to when the scheme reaches the optimal eligible container return rate and enable the Managing Agency to engage with consumers through measures including, for example, targeted scheme consumer marketing and engagement campaigns.
- Implementation of regulated scheme review periods comprising of two (2) initial scheme review periods to assess scheme performance and operation (e.g., eligible scheme container return rates, consumer accessibility) and strategic direction set at the end of the year-3 and year-5 financial periods, then every 5-years thereafter.
  - The benefit of two (2) interim scheme review periods is to enable sufficient time for the scheme to build towards optimal performance and enable the Managing Agency to assess the schemes performance, including, for example, the interim annual container return rate targets and the accessibility of a consumer focussed network of container return facilities.
- Scheme review trigger. The following will apply and align with the above interim annual container return targets - if the return rates does not reach 70% within 36-months, 80% within 48-months or 85% within 60-months, whichever occurs first.
  - The deposit shall automatically be increased to NZD20-cents. This is on the basis that the Managing Agency has explored other improvements to scheme performance including but not limited to increasing scheme awareness and the number of collection sites (along with any increase to the container handling fee to ensure collection sites remain viable) to improve convenience.
  - Notwithstanding the above, the recommended deposit fee of NZD10-cents shall be reviewed by the government regulatory authority (Manatū Mō Te Taiao - Ministry for the Environment) no later than 9-months prior to the scheme to confirm 10-cents as the correct starting deposit value.
- Annual reviews of the Managing Agency will be undertaken by the respective central government department responsible for 'owning' the NZ CRS.
  - The benefit of this approach is to ensure the Managing Agency is held accountable for the performance and operation of the scheme with appropriate financial incentives, for example, to meet and where possible exceed set targets.
- Implement appropriate anti-fraud measures including, but not limited to, contractual obligations, auditing, verification and reporting to closely monitor and assess performance of participants involved in the scheme. Additionally, there is also a role for the scheme regulator

(i.e., central government agency responsible for the NZ CRS) and/or police in legally enforcing the breaches of the law and regulations where appropriate.

- The benefit of this approach is primarily driven by the Managing Agency's ability to track registered scheme containers and participants to minimise scheme fraud and maximise scheme compliance (e.g., integrated IT and financial systems to track eligible and financial transactions).
- Fraud mitigation measures such as a maximum cap on the number of eligible scheme containers returned at any point in time by non-scheme registered individuals.
  - The benefit of this approach is to ensure that all scheme participants involved in the bulk collection of eligible scheme containers are registered within the scheme so that the scheme Managing Agency can manage, monitor and track collection activities and the numbers of containers being returned and deposits refunded through the scheme. Additionally, capping the number of eligible containers returned at any point in time influences tax avoidance by non-scheme registered individuals. The cap will be set at 1,500 containers for a cash deposit refund in alignment with the New South Wales, Queensland and Northern Territory container return schemes in Australia and subject to any specific Aotearoa New Zealand tax laws and scheme measures such as fraud mitigation and reporting requirements. Additionally, the option to include additional container cap numbers for specific container return facilities, for example, retail, will be considered during the NZ CRS implementation stage.
- The maximum container return amount will have to be considered across the three envisaged return point scenarios (Manual Depot, Automated Depot and Return to Retail) with an emphasis on striking a balance between container return efficiency and impact on existing business activities, particularly when considering return to retail points. It may be the case that return to retail points will require site by site consideration to ensure that retail activities are not unduly disrupted by container return activities particularly when the return point is inside the retail operation, for example, inside a supermarket.
  - The benefit of this approach to the NZ CRS is ensuring that container return facilities are not unduly disrupted by container return activities.
- Risk and compliance measures, including but not limited to, auditing of scheme participants and adopting best practice methodology carried out in a way so as to minimise fraud.
  - The benefit of this approach is primarily driven by the Managing Agency to monitor scheme participant compliance with scheme requirements to minimise scheme fraud.
- Revenue generated by the sale of eligible scheme material to be passed on via the Advanced Material Recycling Fee to beverage producers to reflect the choice of container materials used.
  - The benefit of this approach is that the Managing Agency is in the best position to manage the risk and promote the beneficial use of material over the long term. This is beneficial for the Aotearoa New Zealand taiao - environment as it will encourage the reuse of scheme materials with a priority focus on Aotearoa New Zealand based manufacturers.
- Reporting of key scheme performance data including but not limited to monthly rolling average data of scheme performance (e.g., operational, fiscal, health and safety, customer satisfaction) and container return rate targets, or other reporting time period to align with, for example, contractual key performance indicator measures.
  - The benefit of this approach is to ensure the Managing Agency provides clear and transparent information on the efficiency and performance of the scheme whilst highlighting areas of improvement.
- A range of options for consumers to receive the deposit refund is provided for (e.g., manual container return facilities, RVMs) in the design of a NZ CRS, including cash, supermarket voucher (including, for example, a 2-year expiration date), donation, electronic funds transfer, other

(e.g., scheme credit system, loyalty card, gift card). The scheme Managing Agency is to have flexibility to expand the range of refund options supported by robust information (e.g., consumer surveys) and in consultation with the scheme Governance Board and the Government department responsible with scheme oversight. The Managing Agency to also determine whether container return facilities are to provide all or several options to the consumer.

- The benefit of providing New Zealanders with a range of options to receive the NZ CRS deposit refund ensures the scheme is fair to all and provides consumers with choice depending on current situations (e.g., employment status, involvement in charities).
- The Managing Agency will be responsible for the incorporation of social and indigenous procurement elements (e.g., establishment of employment number targets for manual collection depots) in all relevant scheme related contractual requirements.
  - The benefit of this approach is that the Managing Agency can set social targets to support, for example, indigenous employment opportunities.
- The Managing Agency will be responsible for the establishment and ongoing implementation of a NZ CRS education and awareness plan including the provision of educational resources suitable for use in curriculum settings (e.g., interactive NZ CRS web portal).
  - The establishment of a scheme specific education and awareness plan will support the NZ CRS to provide the Aotearoa New Zealand community with more than simply a container recycling scheme. Instead the provision of NZ CRS educational resources will encourage and promote the social good within Aotearoa New Zealand communities that also directly and indirectly drives awareness of and support for the NZ CRS. Additionally, these educational resources will, in a post-COVID-19 economy provide Aotearoa New Zealand communities and individuals with opportunities to diversify skills and provide a mechanism to develop new and/or additional life skills that enhance opportunities to participate in Aotearoa New Zealand's economy.
- The roles and responsibilities, including Managing Agency review periods will be set in the specific container return scheme legislative instruments.
  - Setting the roles and responsibilities of the Managing Agency in the New Zealand Container Return Scheme legislative instruments will provide transparency and accountability to the Managing Agency. Ultimately, the Managing Agency is responsible for the operational and performance success of the NZ CRS and so their specific roles and responsibilities need to be clearly established within the legislative instruments.
- The Managing Agency to ensure all scheme participants (including the general public) comply with relevant legislation, for example, health and safety.
  - The benefit of this approach is to ensure all scheme participants are aware of and meet their obligations as per relevant legislation. Further, the Managing Agency is to ensure that all scheme participants (e.g., container return facilities) have established approved health and safety plans to ensure the safety of all persons engaged in the NZ CRS (including the general public accessing and engaging with container return facilities).

SECTION 15:  
SCHEME GOVERNANCE BOARD

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## Section 15 Scheme Governance Board

The role of a Governance Board in a container return scheme is an important aspect as it is commonly the entity responsible for establishing and monitoring the schemes strategic direction, specifically under the pillars of social, economic, cultural and environmental outcomes. In the Aotearoa New Zealand context, Te Tai Ōhanga – The Treasury uses the Living Standards Framework (LSF) which represents Treasury’s perspective on what matters for New Zealanders’ wellbeing, now and into the future and focusses on natural capital, human capital, social capital and financial/physical capital<sup>970</sup> (Figure 57).



**Figure 57: The living standards framework<sup>971</sup>**

Additionally, the significance of the Governance Board is based on the following key components which are discussed in more detail throughout this section:

- Degree of scheme management – such as strategic management, financial management, regulatory compliance management;
- Level of independence from the Managing Agency – i.e., a clear delineation of responsibilities between the functions of Governance and Management;
- Role and responsibility;
- Representative membership, for example, public, community, beverage, manufacturer, return facility, government;
- Mandate, values and objectives, for example, a container return scheme that supports better whakahaere rauemi - resource management through Extended Producer Responsibility principles;
- Reviewing regulated scheme targets and strategic objectives for continual scheme development;
- Regularly reviewing scheme performance to facilitate continual development and ensuring stakeholder accountability; and
- Supporting scheme innovations.

*The role of a Governance Board in a container return scheme is an important aspect as it is commonly the entity responsible for establishing and monitoring the schemes strategic direction, specifically under the pillars of social, economic and environmental outcomes.*

<sup>970</sup> <https://treasury.govt.nz/information-and-services/nz-economy/higher-living-standards/our-living-standards-framework>

<sup>971</sup> <https://treasury.govt.nz/information-and-services/nz-economy/higher-living-standards/our-living-standards-framework>

The structure and function of the Governance Board varies across the container return schemes with some Boards broadly having a regulated and high-level strategic function with limited sector representation, to Boards that are regulated, provide strategic direction and an active interface with the Managing Agency, including broad sector representation. Consequently, the structure and function of the Governance Board will be essential to provide the foundation and strategic direction of the NZ CRS.

## 15.1 Scheme Management Structure – The Governance Board and Stakeholders

The structure of a container return scheme Governance Board is a vital component in the development and performance of a scheme and significantly influences the role and degree of influence that the Board has on the management functions delivered by the Managing Agency.

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*Typically, the Governance Board in container return schemes provide strategic oversight and direction to the Managing Agency to support the development and continual improvement of the scheme.*

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Typically, the Governance Board in container return schemes provide strategic oversight and direction to the Managing Agency to support the development and continual improvement of the scheme. Additionally, while providing this support, the Governance Board is also responsible for reporting to the respective government agency on the performance of the scheme, commonly as a requirement of prescribed NZ CRS legislative instrument. Further, the Governance Board in most cases is comprised of representatives from several sectors which may include beverage, retailers, community, local and central government to ensure that a schemes strategic direction is underpinned by social, economic, cultural and environmental outcomes.

The establishment of a NZ CRS Governance Board coupled with clarity on its structure, and Board member roles and responsibilities, will be critical components in ensuring robust strategic direction is established to support the scheme. Additionally, the membership of the Governance Board will require clarity to ensure sufficient independence is established between the governance and management of the NZ CRS so as to avoid perceived and/or real conflict of interest to stakeholders. For example, this may include a requirement for Governance Board members to have no connection with any member of the Managing Agency or suppliers that work for the Managing Agency. Further, the Board membership, length of tenure and experience will require careful consideration to ensure the Governance Board provides active and constructive strategic direction to the Managing Agency. As has been seen in many other global container return schemes, the structure and function of the Governance Board is detailed in specific scheme legislative instrument (e.g., regulations). Similar legislative instruments may be required to support the ongoing development and success of a NZ CRS.

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*The structure and function of the Governance Board varies across the container return schemes with some Boards broadly having a regulated and high-level strategic function with limited sector representation to Boards that are regulated, provide strategic direction and an active interface with the Managing Agency, including broad sector representation.*

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The following case study examples are provided as a continuation of those provided in Section 14 (Managing Agency) to provide clarity on the various Governance Board structures from several global container return schemes. The case studies discuss the role and responsibility (including governance structures) of the Governance Boards and the connection with the Managing Agency to ensure effective strategic guidance and financial direction is provided where the scheme design facilitates this relationship.



### 15.1.1 Danish Container Return Scheme Case Study

The Dansk Retursystem is a limited-liability company and is majority owned by the Danish breweries which collectively comprise Dansk Retursystem Holding; one of the four owners<sup>972</sup>. The percentage split between the respective owners of Dansk Retursystem are reported as follows:

- Dansk Retursystem Holding – 85.62%;
- Harboes Bryggeri – 14.27%;
- Bryggeriet Vestfyen – 0.1%; and
- Mineralvandsfabrikken Frem – 0.01%.

As noted above, the Dansk Retursystem Holding comprises Danish breweries which include Carlsberg, Royal Unibrew, Thisted Bryghus, Bryggeriet Fuglsang and Hancock Bryggerierne.

Providing governance to the operation of the Dansk Retursystem is the Dansk Retursystem Board of Directors comprising 13-members (including the Chair). The Board of Directors includes representatives from the following organisations:

- Danish Brewers Association (1 representative);
- Carlsberg Danmark A/S (3 representatives);
- Confederation of Danish Enterprise (1 representative);
- Carlsberg Supply Company Danmark A/S (1 representative);
- Royal Unibrew A/S Denmark (2 representatives);
- Harboes Bryggeri A/S (1 representative);
- Coop Invest A/S (1 representative);
- Salling Group (1 representative);
- Association of Danish Grocers (1 representative); and
- Dansk Retursystem Board of Directors – Chair (1 unconnected and non-partisan representative).

In addition to the Board of Directors, the Dansk Retursystem includes a ‘Contact Group’ which was established to ‘ensure effective communication with stakeholders that are not represented on the Dansk Retursystem’s Board of Directors’ and to share knowledge among members of the Group and the Dansk Retursystem<sup>973</sup>. The group is a legally mandated communication and hearing entity which receives information and status updates on the operation of the Dansk Retursystem, including financial, operations, strategic projects and the status of work carried out by the Board of Directors such as any changes in legislation undertaken alongside public authorities.

To ensure independence, members of the Contact Group are ‘prohibited from being among Dansk Retursystem’s owners or its Board of Directors or in any other manner being represented on Dansk Retursystem’s other permanent committees or being employed by the company’. As a result, while the Contact Group is open to everyone, the aim is to have a balanced composition in keeping with the purpose of the Group. The way in which a person is officially elected a member of the Group was unclear due to limited available information, however, as reported on the Dansk Retursystem website any persons with an interest in becoming a member of the Group initially contacts the Deputy CEO of the Group via email as noted on the website.

There was limited available information at the time of writing to provide further detail on any Contact Group articles of association or the specific mandate and objectives of the Group. However, the below list summarises the current members of the Group:

<sup>972</sup> <https://www.danskretursystem.dk/en/about-dansk-retursystem/ownership-board/>

<sup>973</sup> <https://www.danskretursystem.dk/en/contact-group/>

- Danish Beer Enthusiasts - consumer organisation;
- Nærbutikkernes Landsforening – representing small companies handling returns;
- Association of Danish Restaurants and Cafes – representing small companies within the hotel, restaurant and catering sector;
- Coca-Cola Nordic Services A/S – producer;
- Aqua D’or Mineral Water A/S – producer;
- TheoBrands A/S – importer;
- Hansen & Co. A/S – importer;
- Peter Skafte ApS – importer and intermediary;
- Bryggeriet S.C. Fuglsang A/S – brewery; and
- Danish Consumer Council – consumer organisation.

### 15.1.2 Alberta Container Return Scheme Case Study

The Alberta container return scheme was established in 1972 under the Litter Act (Alberta) to address the states litter problem which was attributed to the disposal of single-serve beverage containers. The Alberta container return scheme has though evolved and shifted from litter control to waste diversion and now to resource management. As noted in Section 14.2.3, the structure of the Alberta container return scheme comprises three (3) organisations which together manage the performance of the scheme:

- The not-for-profit Alberta Beverage Container Recycling Corporation (ABCRC);
- The Beverage Container Management Board (BCMB); and
- Alberta Bottle Depot Association (ABDA).

This section will discuss the roles and responsibilities of the above three (3) organisations in the governance of the Alberta container return scheme.

#### 15.1.2.1 Alberta Beverage Container Recycling Corporation

As reported by the ABCRC, the corporate governance team comprises a Board of Directors which consists of shareholder representatives from beverage manufacturers and the Alberta Gaming, Liquor and Cannabis Commission (the deemed manufacturer of all alcoholic beverages). Additionally, the Directors and non-director committee members do not receive any remuneration for their involvement in the ABCRC Board. The ABCRC Board of Directors currently comprises nine (9) representatives from the following organisations<sup>974</sup> (noting the Board of Directors will consist of ten (10) Directors – no further information was available why the below Board comprised 9 Directors):

- Canadian Beverage Association (2 representatives);
- The Pepsi Bottling Group (Canada) Ltd (1 representative);
- Refresco North America (1 representative);
- Parmalat Canada (1 representative);
- Alberta Gaming, Liquor and Cannabis Commission (1 representative);
- Coca-Cola Refreshments Canada (1 representative);
- Canada’s National Brewers (1 representative); and
- The Beer Store and Brewers Distributor Ltd (1 representative).

According to the Alberta Unanimous Shareholders Agreement, the ABCRC Board of Directors are elected by ABCRC Shareholders reported as:

<sup>974</sup> <https://www.abcrc.com/about-us/corporate-governance/>

- Canadian Beverage Association (300 Class A Shares<sup>975</sup>);
- Refresco Canada Inc. (100 Class A Shares);
- Alberta Beverage Council (200 Class A Shares);
- Western Dairy Council (100 Class A Shares); and
- Alberta Beer Container Corporation (200 Class A Shares).

It is reported that on the fifth anniversary of the signing the Unanimous Shareholders Agreement and every 5-years thereafter, the ABCRC will determine the market share based on unit sales volume of each market sector with the Shareholders then determining whether the market shares have changed sufficiently to change the rights to nominate the Board, noting 100% of the Shareholders is needed to make any changes. At present the Shareholders have the following Board of Director nomination rights:

- Canadian Beverage Association is entitled to nominate three (3) directors, including replacements from time to time;
- Refresco Canada Inc. is entitled to nominate one (1) director, including a replacement from time to time;
- Western Dairy Council is entitled to nominate one (1) director including a replacement from time to time;
- Alberta Beverage Council is entitled to nominate two (2) directors, including replacements from time to time;
- The Alberta Gaming and Liquor Commission is entitled to nominate one (1) director, including a replacement from time to time; and
- Alberta Beer Container Corporation is entitled to nominate two (2) directors, including replacements from time to time.

The responsibilities of the Board of Directors are set out in the Charter of Expectations of Board of Directors<sup>976</sup> and include the following responsibilities (the Charter of Expectations of Board of Directors should be consulted for further detail):

- Direct and supervise strategic management by:
  - Providing input to management on emerging trends and issues;
  - Reviewing and approving management's strategic plan;
  - Reviewing and approving ABCRC's objectives, plans and actions, including capital plans;
  - Approving all operating and capital budgets; and
  - Approving all reallocations among capital budgets subject to any guidelines or limitations imposed by the Shareholders.
- Appoint and oversee the President;
- Represent the Shareholders and maintain Shareholder relations;
- Maintain stakeholder relations;
- Protect and enhance ABCRC's assets;
- Fulfil fiduciary and legal requirements; and
- Manage the affairs of the Board.

In addition to the Unanimous Shareholders Agreement and the Charter of Expectations of the Board of Directors, the ABCRC Board of Directors must also abide by and be managed by the following publicly available documents<sup>977</sup>:

- Terms of Reference for an Individual Director;

<sup>975</sup> Class A shares are defined in the Unanimous Shareholders Agreement as with voting rights and no dividend rights

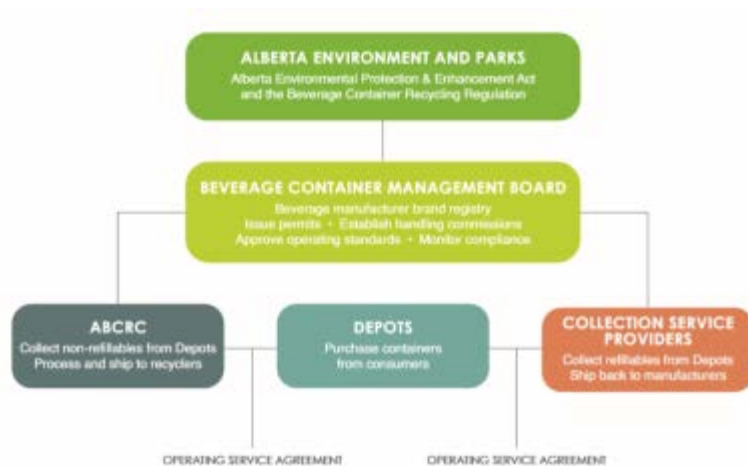
<sup>976</sup> <https://www.abcrc.com/about-us/corporate-governance/>

<sup>977</sup> <https://www.abcrc.com/about-us/corporate-governance/>

- Terms of Reference for the Governance Committee;
- Terms of Reference for the ad-hoc Handling Commissions Committee;
- ABCRC By-Laws;
- Terms of Reference for the Board Chair;
- Terms of Reference for Committee Members;
- Terms of Reference for the Communications and Stakeholder Relations Committee;
- Terms of Reference for the President;
- Terms of Reference for the Audit Committee; and
- Board Diversity Policy.

### 15.1.2.2 Beverage Container Management Board

As with the Alberta Beverage Container Recycling Corporation (ABCRC), the Beverage Container Management Board (BCMB) is also a not-for-profit organisation established under Alberta's Environmental Protection and Enhancement Act and incorporated under the Societies Act of Alberta (Figure 58).



**Figure 58: Structure of the Alberta container return scheme**<sup>978</sup>

The BCMB is responsible for ‘regulating Alberta’s beverage container recycling system and leads the development of policy and programs that enable the recycling of beverage containers in Alberta’<sup>979</sup>. Further, as noted in the Memorandum of Understanding (MoU) between BCMB and the Minister of Environment and Parks, the BCMB Board mandate is to act at arm’s-length from government and manages the provincially regulated recycling programme for beverage containers. Additionally, the MoU states the following requirements of the Board:

“The Board is responsible for the governance of the organisation and overseeing the management of the organisation’s business and affairs. The Board guides the organisation’s strategic direction, evaluates the performance of the organisation’s Chief Executive Officer, approves, monitors, and reports on the organisation’s business plan and financial results, and is ultimately accountable to the Minister. Board members must act honestly, in good faith, leaving aside personal interests to advance the public interest and the mandate of the organisation.”

The function of the BCMB is as a Delegated Administrative Organisation (DAO) created through legislation that has delegated government authority under the Ministry of Environment and Parks to carry out specific functions described in legislation, regulations or memorandum of understanding on the container return scheme. The DAO and in this case the BCMB, is reported to function at arms-length, self-funded, legal entities established to carry out services that were traditionally delivered by

<sup>978</sup> Alberta Beverage Container Recycling Corporation Annual Sustainability Report 2018

<sup>979</sup> <https://www.bcmb.ab.ca/about/>

the Alberta Government<sup>980</sup>. As reported by the BCMB, DAO's are used to encourage a range of stakeholders to participate in the scheme, including government, industry and the public and typically involve these parties being involved in the scheme through appointments to the Board of Directors. The following industry organisations are involved in the BCMB:

- Alberta Beverage Container Recycling Corporation - Collection System Agent (ABCRC);
- Alberta Bottle Depot Association – representing depots (ABDA);
- Brewers Distributor Ltd – Collection Service Provider (BDL);
- Alberta Gaming, Liquor and Cannabis Commission - oversees Alberta's liquor, gaming and cannabis industries (AGLC);
- Alberta Urban Municipalities Association (AUMA); and
- Western Dairy Council (WDC).

As reported by the BCMB, the Board of Directors comprises 13 representatives and includes representation from a cross-section of stakeholders, including beverage manufacturers, depot owners and representatives, municipal and provincial government representatives and the public. The number of Board directors are listed below including the nominating organisation:

- Four (4) public representatives
  - Three (3) BCMB nominations
  - One (1) Alberta Urban Municipalities Association nomination
- Four (4) depot representatives
  - All nominated by the Alberta Bottle Depot Association
- Four (4) manufacturer representatives
  - One (1) each nomination from the Alberta Gaming, Liquor and Cannabis, Canadian Beverage Association, Alberta Beer Container Corporation and Western Dairy Council
- One (1) government representative
  - Nominated by Alberta Environment and Parks

With regards to Board tenure ship, Board members each sit for a 3-year term (with a maximum of 3-terms) and also serve on a number of board committees with director appointments reviewed annually at the BCMB's Annual General Meeting and Board meeting<sup>981</sup>. Further, the Board of Directors is supported by BCMB's Executive Team which has the function of overseeing the regulatory functions of operations and compliance, product registrations, policy and finance<sup>982</sup>.

As with the ABCRC, the BCMB upholds the following values providing guidance to the Board of Directors:

- Higher beverage container return rates;
- Accessible, quality, convenient and safe services from Depots;
- Secure, cost effective container collection, processing and recycling;
- Greater awareness and public participation;
- Strong alignment among stakeholders;
- Innovation and technology driven efficiency;
- Consistent, fair and firm enforcement of meaningful standards for manufacturers, retailers, Depots, Collection Service Providers and the Collection System Agent; and
- Financial transparency.

Further, under the Beverage Container Recycling Regulation (101/1997), the BCMB must at the start of each fiscal year provide to the Minister a business plan indicating its goals for the coming fiscal year and

<sup>980</sup> Beverage Container Management Board Three Year Business Plan: January 1, 2018 to December 31, 2020

<sup>981</sup> <https://www.bcmb.ab.ca/about/board-directors/>

<sup>982</sup> BCMB 2018 Annual Report

not more than 6-months after the end of each fiscal year provide to the Minister an annual report summarising the activities of the Board and containing the audited financial statements for the Board for the fiscal year. In addition, the Board is required to report to the Minister the remuneration and benefits paid to Board members.

### 15.1.2.3 Alberta Bottle Depot Association

As discussed in Section 14.2.3, the Alberta Bottle Depot Association (ABDA) provides the industry voice for the schemes bottle depots (collection depots). As discussed in previous sections, the Alberta scheme comprises approximately 200 collection sites located throughout most of Alberta and which are serviced by the ABCRC and regulated by the BCMB. No further information was available at the time of writing to provide further clarity on the governance structure of the ABDA or associated processes to elect members.

### 15.1.3 Queensland Container Return Scheme Case Study

The Queensland, Australia container return scheme was established under the Waste Reduction and Recycling Act 2011 provisions which provide the legislative framework for the scheme to operate within. Shortly after the Waste Reduction and Recycling Act 2011 was passed, Container Exchange (COEX) was conditionally appointed as the Product Responsibility Organisation (i.e., Managing Agency) to operate and provide governance for the scheme known as Containers for Change<sup>983</sup> (refer Section 14.2.4 for further detailed information). In comparison to the independent Danish and Alberta scheme governance board organisations, the COEX Governance Board has been established within the COEX organisation but with specific conditions as set out in the COEX Board Charter including that at all times, the number of Directors must be nine (9) and the Board must have no more than four (4) Directors at any time that are Executive Officers, employees or Business Associates of Large Beverage Manufacturers. Additionally, the COEX Board Charter includes the provision for Directors to appoint alternate Directors in accordance with the Constitution.

At present, the COEX Board comprises nine (9) representatives from the beverage, manufacturing and logistics industries which report on the schemes performance to the Minister for the Environment and the Great Barrier Reef, Minister for Science and Minister for the Arts<sup>984</sup>.

As reported in Section 14, COEX was given an AUD\$35million interest free 18-month loan by the Queensland Government to provide working capital for the operation of the scheme (noting the scheme payment system has now been changed to a payment in arrears system where first suppliers provide their sales data at the end of every month and must pay within the next month). As reported in the COEX 2018/19 Annual Report, this loan will be repaid in full during the financial year ending 30 June 2020. To this end, once the loan is paid off, the COEX Board Charter notes that it is required (by the Waste Reduction and Recycling Act 2011 (Queensland) and the COEX Board Charter) to comprise the following persons:

- A chairperson that is a director, independent of the beverage industry and is approved by the Minister;
- At least one (1) person who is an Executive Officer, employee or Business Associate of a Small Beverage Manufacturer or an association that represents Small Beverage Manufacturers;
- At least one (1) person representing the interests of the community who is Independent of the Beverage Industry and approved by the Minister;
- At least one (1) person who is an Executive Officer, employee or Business Associate of a Large Beverage Manufacturer;

<sup>983</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>984</sup> <https://www.containerexchange.com.au/about-us/>

- At least one (1) person who has legal qualifications and experience and is independent of the Beverage Industry; and
- At least one (1) person who has financial qualifications and experience and is independent of the Beverage Industry.

In addition to the above COEX Board Charter requirements, the Waste Reduction and Recycling Act 2011 (Queensland) requires the COEX Board to include the following:

- One (1) person being a nominee of Coca-Cola Amatil (Aust) Pty Ltd; and
- One (1) person being a nominee of Lion Pty Ltd.
  - Eligible Individuals who represent any Beverage Industry Bodies that have been admitted as Members.
  - Eligible Individuals representing the Beverage Industry.

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*Setting scheme targets is an important aspect of measuring the performance of a scheme while providing the basis on which the scheme Managing Agency and Governance Board can report on. In most global container return schemes, specific scheme targets including return rates and the number of container return facilities are included in regulation which hold the Managing Agency and/or Governance Board to account.*

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According to the COEX Board Charter, Directors are appointed temporarily and hold office until the next annual general meeting of COEX where the newly appointed Director must stand for election by Members.

## 15.2 Setting of Scheme Targets

Setting scheme targets is an important aspect of measuring the performance of a scheme while providing the basis on which the scheme Managing Agency and Governance Board can report on. In most global container return schemes, specific scheme targets including return rates and the number of container return facilities are included in regulation which hold the Managing Agency and/or Governance Board to account.

Similarly, where the regulations provide the foundation of a scheme, the scheme Governance Board along with the respective Managing Agency commonly establish a business plan to reflect the strategic direction while including measurable indicators to support environmental, social, cultural and economic outcomes. For example, common strategic areas of reporting include return rate performance against regulation and previous years data, establishment and development of container return facilities, greenhouse gas emissions, employment numbers, distances travelled by material type to end-markets as well as fiscal indicators, customer satisfaction and community initiatives.

Taking these aspects into consideration, the establishment of a NZ CRS will benefit from ensuring clear scheme targets (e.g., return rates, deposit amount, deposit review period, governance board targets) are set in regulation to provide the baseline against which the agency responsible for operating and the managing the scheme must abide by and be held accountable to. Additionally, the NZ CRS will benefit from establishing clear targets specific to the Governance Board, but this will be dependent on the role and responsibility of the Governance Board.

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*Similarly, where the regulations provide the foundation of a scheme, the scheme Governance Board along with the respective Managing Agency commonly establish a business plan to reflect the strategic direction while including measurable indicators to support environmental, social and economic outcomes.*

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The following case studies from Alberta, Queensland and Scotland have been provided to illustrate the various ways scheme targets have been included in a container return scheme, including via regulated means supported by Governance Board business plans.

### 15.2.1.1 Alberta Beverage Container Management Board

To track and report on (i.e., annual report) scheme performance, the BCMB governance board has established five (5) performance indicators which align with the five (5) goals for the Alberta container return scheme (see Section 15.5 for further information). Of note, the BCMB has not established targets

due to external factors influencing the performance indicators and so rather reports on and compares data from a 3-year period (e.g., 2018 Annual Report compares data from 2016 – 2018).

The following list summarises the performance indicators and the specific measures<sup>985</sup>:

- Environmental Protection Indicators
  - Overall Return Rate – Alberta Government goal of 85%
  - Return Rate by Container type
  - Containers returned
  - Distance travelled per container
  - Landfill space saved
- Fiscal Stewardship Indicators
  - Net system cost
    - Total of all costs and offsetting revenues in dollars per container
  - Net system cost per container type
    - cans and glass, plastics, polycoats (e.g., liquid paperboard)
  - Payment compliance
    - The percent of all payments made to depots within the industry standard
  - Collection compliance
    - The number of reported loads not picked up from depots within the industry standard
  - Operating compliance
  - The inspection score based on agreed performance standard
- Governance Excellence Indicators
  - Refund compliance
    - The % of audits conducted that were refunded within industry standards
    - The % of audits conducted that were refunded within the industry standard of excellence)
  - Quality compliance
    - Shipments of containers from depots within industry standard
  - Inspection compliance
    - The % of depots scoring above the industry standard based on industry approved criteria
    - Average actual depot inspection score of the poorest performing depots (bottom 25%)
  - Uniform Code of Accounts compliance
    - The % of depots that filed required financial documents to the data collection agent
  - Sales verification
    - The % of all container sales remitted to the collection system agent
  - Review, mapping and alignment of by-laws, policies and standard operating procedures
- Customer Excellence Indicators
  - Public satisfaction
    - Participation and average travel time to a depot
  - Customer satisfaction
    - Overall satisfaction and average time spent in a depot
  - Depot satisfaction
    - Overall depot satisfaction with the collection system agent

<sup>985</sup> BCMB 2018 Annual Report



- Public awareness
  - Individuals aware of the container return scheme
  - Individuals who believe that recycling beverage containers has a significant impact on the environment, individuals aware of the deposit brand
- Customer awareness
  - Individuals aware of the industry brand
- Number of depots in Alberta - accessibility
- Number of permits in development
- System Efficiency and Effectiveness Indicators
  - Seedbed activity
    - Depot pilot project participants
  - Investment in technology
    - Return on investment
  - Net cost for the recycling consumer in cents per container
  - Ranking of comparable deposit jurisdictions
  - Labour efficiency
    - seconds per container at depots

In addition to the above scheme specifics for single-use non-refillable containers, manufacturers of reusable (i.e., refillable) containers for sale in Alberta are also included within the Alberta Beverage Container Recycling Regulation 101/97. The regulations for reusable containers stipulate that manufacturers of reusable containers for sale in Alberta must either provide a collection service capable of recovering the empty reusable (i.e., refillable) registered containers from all depots and retailers accepting such containers, or, use the common single-use non-refillable collection system for the recovery of those containers.

Of note, the BCMB Governance Board as part of the 2015 – 2017 business plan<sup>986</sup> set a glass refillable return rate target of 93.1% and 93.0%, for 2016 and 2017, respectively, along with specific return rate targets by container type (Table 34). With the development of the 2018-2020 business plan<sup>987</sup>, the BCMB combined cans and glass (including reusable [i.e., refillables]) with the following return rate targets by container type for the period 2018 to 2020 (Table 30). It is clear from Table 34, that the BCMB through the establishment of the 2018-2020 business plan has achieved an overall scheme return rate above the unofficial scheme return rate target of 85%. However, as has been reported in previous sections, the ability of a scheme to reach these return rate targets is influenced by external factors such as public engagement and accessibility to container return locations.

**Table 30: Alberta Beverage Container Management Board return rate targets by container type for the period 2018 to 2020<sup>988</sup>.**

Container Type	2018	2019	2020
Overall return rate	90.0%	89.9%	89.7%
Cans and glass (including reusables [i.e., refillables])	90.0%	89.9%	89.7%
Plastics	81.4%	81.3%	81.1%
Polycoats (e.g., liquid paperboard)	73.6%	73.5%	73.3%

<sup>986</sup> Beverage Container Management Board: Three Year Business Plan January 01 2015 to December 31 2017

<sup>987</sup> Beverage Container Management Board: Three Year Business Plan January 01 2018 to December 31 2020

<sup>988</sup> Beverage Container Management Board: Three Year Business Plan January 01 2018 to December 31 2020

## 15.2.2 Queensland Container Exchange Governance Board

Notwithstanding the entirety of the Waste Reduction and Recycling (Container Refund Scheme) Amendment Regulation 2018, the regulation specifically sets out several key targets that the Queensland scheme administrator is required to meet, and which are reported on in the COEX Annual Reports, the most recent being published in the 2018/19 financial year<sup>989</sup>. These summarised regulated targets include<sup>990</sup>:

- Container recovery rate – preliminary years
  - For each preliminary year COEX must decide a percentage that it proposes to achieve as the container recovery rate for that year.
  - COEX must publish on its website the percentage that is decided for a preliminary year.
  - COEX is to achieve a container recovery rate for each preliminary year that is at least the percentage that is published for that year.
- Container recovery rates – other years
  - COEX must achieve a container recovery rate of at least 85% for the financial year starting 1 July 2021 and for each subsequent later financial year.
- Container refund points
  - COEX must ensure that at least 307 container refund points are established by 01 November 2019 and that these container refund points are operating for the remainder of the financial year ending June 2020 and for each subsequent financial year.
  - A minimum of 307 container refund points was determined by the Queensland Government to maintain reasonable accessibility and coverage across the State.
  - COEX is also expected to establish container refund points to provide coverage to accommodate population growth areas and fill identified gaps in the network.

## 15.2.3 Scotland Container Return Scheme Targets

The recently enacted Scotland container return scheme regulation sets clear targets which the producer must meet regarding scheme packaging. These targets are set as a staged approach and increase over a 3-year period to account for, and to, reflect the time needed for the scheme to be established; for example, consumer understanding of the scheme and accounting for the retailer transition period. The below list summarises the key targets set in the regulations, and which should be consulted for further detailed schedule information:

*Part of ensuring Governance Board accountability to stakeholders, is the need to ensure budgets are appropriately developed and approved to ensure rigour is applied to financial management.*

- Overall return rate<sup>991</sup>
  - Year 1 (01 January 2023 to 31 December 2023) a container return target of 70%;
  - Year 2 (01 January 2024 to 31 December 2024) a container return target of 80%; and
  - For the calendar year beginning on 01 January 2025 and for every subsequent year a container return rate of 90%.

Container return rate by material type<sup>992</sup>:

- Polyethylene terephthalate (PET) plastic 85%;
- Glass 85%; and
- Aluminium 85%.

<sup>989</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>990</sup> Waste Reduction and Recycling (Container Refund Scheme) Amendment Regulation 2018

<sup>991</sup> The Deposit and Return Scheme for Scotland Regulations 2020

<sup>992</sup> The Deposit and Return Scheme for Scotland Regulations 2020

Additionally, as stated in the Deposit and Return Scheme for Scotland Regulations 2020, the Scottish Ministers may in accordance with Part 4 (Scheme administrator) approve a scheme administrator. The scheme administrator is defined in the regulations as a person who is responsible for submitting an application for producer registration on behalf of a producer under regulation 7(1)(b) where requested by a producer to do so, and complies with regulations 10(1) and 11(1) on behalf of such a producer (refer to the Deposit and Return Scheme for Scotland Regulations 2020 for further detailed information). Further, as required by the regulations (Part 16), the scheme administrator must also provide information as and when required to the Minister regarding the scheme and which may include reporting of regulated return rates versus actual return rates.

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*Most container return schemes have been designed based on a litter reduction objective with a move towards recycling and now greater focus on resource management.*

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### 15.3 Budget Approval

Part of ensuring Governance Board accountability to stakeholders, is the need to ensure budgets are appropriately developed and approved to ensure rigour is applied to financial management. Where financial information was available, including the associated approval processes, there appeared to be no consistent processes applied to the organisation (i.e., Governance Board or Managing Agency) responsible for developing and establishing the scheme budget. Further, where Government agencies were directly involved in the performance of the container return scheme, budgets would either be approved by the Government or budgets reported to the government agency by the scheme Governance Board. Similarly, where budgets were developed by the Managing Agency, review and approval of these appeared to be carried out by the Governance Board under a charter reflecting regulatory requirements.

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*Many container return schemes have regulated review periods to assess the performance of the scheme, including the appropriateness of the deposit amount and its impact on container return rates.*

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However, given the structure of the Governance Board including in most cases the Chair or President of the Managing Agency, connection between these organisations appeared to facilitate transfer of information to support the establishment of scheme budgets.

So, while the process for budget scheme approval can involve several methods, it would appear that Government has an additional significant compliance role to play in both approving and/or scrutinising the financial records of the scheme. It is though clear that a container return scheme requires a well-defined process including independence to determine the financial roles and responsibilities of both the Managing Agency and the Governance Board. The following discussion provides information on the Alberta and Queensland container return schemes with more detail provided on Alberta due to the amount of information publicly available.

Acknowledging the varied processes of approving budgets from across the global container return schemes, the NZ CRS design process will require the clear definition of the role and responsibility of both the Managing Agency and the scheme Governance Board specifically in relation to the financial management and strategic direction of the scheme. The research does however suggest that typically both the Managing Agency and scheme Governance Board jointly establish the scheme financials including required budgets which should also align with the scheme's strategic direction. Additionally, the role of the New Zealand Government is an important part of the budget approval process, particularly if, for example, the Government were to advance financial support to the Managing Agency to initiate the scheme and/or provides infrastructure investment (e.g., Material Consolidation Facility, container return facility) through start-up funds (as has occurred in the Queensland scheme). In such cases, the Government may, for example, impose strict repayment terms coupled with scheme performance measures to ensure monies are linked to tangible scheme outcomes

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*Where Government agencies were directly involved in the performance of the container return scheme, budgets would either be approved by the Government or budgets reported to the government agency by the scheme Governance Board. Similarly, where budgets were developed by the Managing Agency, review and approval of these appeared to be carried out by the Governance Board under a charter reflecting regulatory requirements.*

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(i.e., transparency and accountability for the use of taxpayer funds). It is acknowledged that further detailed investigation is required during the NZ CRS implementation phase to assess funding options during start-up including the requirement for any Government scheme working capital loan, including the specific repayment conditions to be imposed on the Managing Agency and scheme Governance Board.

The Alberta Beverage Container Management Board (BCMB) (i.e., Governance Board) and the BCMB Executive Team (see Section 15.1.2.2 for further information) work collaboratively to develop and approve the annual operating budget and the 3-year business plan (see Section 15.1.2.2 for further information) which are submitted to the Ministry of Environment and Parks for review and approval. The BCMB governance board also carries out quarterly reviews of financial statements and applicable policies as well as being externally audited on an annual basis. Along with the Governance Board, the BCMB Executive Team undertake quarterly risk reviews with the overarching risk register reviewed and updated by the BCMB Governance Board on an annual basis.

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*To ensure visibility of scheme information, the Governance Board commonly supports the Managing Agency through the development of strategic business plans which are set for a period of time (e.g., annual, bi-annual, three-years, 5-years).*

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As reported in Section 14, Container Exchange (COEX) was given an AUD\$35million interest free 18-month loan by the Queensland Government to provide working capital for the operation of the Queensland container return scheme. As reported in the COEX 2018/19 Annual Report, this loan will be repaid in full during the financial year ending 30 June 2020. To this end, once the loan is paid off, the COEX Board is required by the Waste Reduction and Recycling Act 2011 (Queensland) to comprise an amended Board to include representation from the beverage industry, community, legal and financial (see Section 15.1.3 for further information). Unfortunately, no information was available at the time of writing to provide clarity on the procedures and processes undertaken by the COEX Governance Board or the COEX Managing Agency regarding the scheme budget development, reviews or approvals.

## 15.4 Scheme Review

As has been discussed throughout previous sections, most container return schemes have been designed based on a litter reduction objective with a move towards hangarua - recycling and now greater focus on whakahaere rauemi - resource management. With this in mind, container return schemes have often been established for selected single-use beverage containers, with a set deposit amount and coupled with a scheme container return rate. These factors are either regulated or set by the agency responsible for managing the scheme, and which often have regulated review periods to assess the performance of the scheme, including the appropriateness of the deposit amount and its impact on container return rates.

For example, in September 2019, the British Columbia Ministry of Environment and Climate Change undertook a Plastic Action consultation process<sup>993</sup> to consult on the proposed implementation areas. One of these areas included the plastic bottle and beverage container returns, specifically the expansion of the deposit-refund system to cover all beverage containers (including milk and milk-substitutes), with an increased CAD10-cent refundable deposit. The consultation document noted that the inclusion of milk and milk-substitutes which are currently included under the residential packaging and paper products schedule of the Recycling Regulation<sup>994</sup> would provide the necessary incentive for consumers to increase consumer returns and capture these container types from commercial sources (e.g., restaurants, schools, offices) which are currently exempt from the Regulation. However, any change would though require an amendment to the Recycling Regulation which as reported, has a range of deposit refund amounts of CAD5-cents to CAD20-cents depending on the container type. Additionally, the Recycling Regulation requires refunds to be paid in cash with the deposit amount to be

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<sup>993</sup> Plastics Action Plan: Policy Consultation Paper. Ministry of Environment and Climate Change Strategy, September 2019

<sup>994</sup> Environmental Management Act Recycling Regulation 206/2017

printed on the consumer receipt at the time of purchase, with no other refund option currently included in the regulation.<sup>995, 996, 997</sup>

Further and of note, the Oregon container return scheme reported container return rates stagnating at approximately 65% until 2016 after which the refund amount (for all eligible containers) was doubled from CAD5-cents to CAD10-cents resulting in the return rate increasing to 90% in 2018. Similarly, as reported by the British Columbia Plastic Action Plan, Alberta also increased the refund amount to a minimum of CAD10-cents also expanded the eligible containers to include milk and related products resulting in an increase of return rate from 75% to 85%<sup>998</sup>. Unfortunately, no information was available at the time of writing to provide further clarity on the process undertaken and/or frequency for regulatory reviews (e.g., review of the refund amount based on return rates declining or stagnating) and so no further comment can be made here at this time.

Considering the above in relation to the NZ CRS design, incorporation of a suitable scheme review period into the bespoke NZ CRS legislative instrument will be a key component to assess (e.g., return rate versus regulated targets, scheme participant and consumer survey outcomes, scheme financial reviews) scheme performance ensuring the success of the NZ CRS. Additionally, while the research indicated no consistent scheme review period, it is acknowledged from discussions with several global container return schemes that a regulated review period approximately three (3) to five (5) years after day-1 of the scheme operations beginning provides sufficient time for the scheme to reach optimal performance, for example, the targeted container return rates as well as the establishment of an accessible consumer focussed network of container return facilities. Further, it is acknowledged that the Managing Agency with support from the scheme Governance Board will undertake regular scheme reviews through mechanisms such as the production of annual reports, audit and compliance reviews and scheme participant surveys, with the information supporting continual scheme improvements. As such, the implementation of a range of both regulated and internal scheme reviews will ensure the continual success of the NZ CRS.

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*The purpose of the business plan is to set the overarching strategy to facilitate performance of the scheme as well as establishing a roadmap for continual scheme improvements (including the provision of stretch targets for the Managing Agency)*

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## 15.5 Accountability to Stakeholders Including Consumers

Accountability and transparency of information to scheme stakeholders including consumers has been discussed throughout previous sections highlighting relationships between scheme variables such as scheme performance and an understanding of the scheme by participants. To ensure visibility of scheme information, the Governance Board commonly supports the Managing Agency through the development of strategic business plans which are set for a period of time (e.g., annual, bi-annual, three-years, 5-years). The timeframe a business plan is established for is generally dependent on factors including, legislative directives, policies and business cycles. The purpose of the business plan is to set the overarching strategy to facilitate performance of the scheme as well as establishing a roadmap for continual scheme improvements (including the provision of stretch targets for the Managing Agency). The role of the scheme Governance Board in ensuring accountability to stakeholders including consumers is commonly through strategic oversight and performance measures of the Managing Agency whereas the role of the Managing Agency is to provide visibility and transparency of scheme

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*Innovations are an important aspect of continual improvement processes, including the development and implementation of more effective programmes in container return schemes.*

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<sup>995</sup> Environmental Management Act Recycling Regulation 206/2017

<sup>996</sup> Plastics Action Plan: Policy Consultation Paper. Ministry of Environment and Climate Change Strategy, September 2019

<sup>997</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>998</sup> Plastics Action Plan: Policy Consultation Paper. Ministry of Environment and Climate Change Strategy, September 2019

information, such as financial performance and return rates to scheme participants (including the Governance Board).

Therefore, considering the NZ CRS design which will include a Managing Agency and a scheme Governance Board, it is important to provide clarity on the role and responsibility of both in terms of the accountability to scheme stakeholders. A Managing Agency that is structured as a single, independent and not-for-profit organisation is anticipated to be best placed to manage the day-to-day operation and performance of the NZ CRS (e.g., communications to scheme participants and consumers via mechanisms such as the scheme website, social media platforms) supported by an independent Governance Board providing the strategic direction and oversight. The benefit of this approach is a single Managing Agency with the responsibility and accountability to ensure the operation and performance to consistently deliver a consumer focussed scheme and strive to make the scheme as cost efficient as possible whilst continually improving on and reporting against the schemes social, economic and environmental objectives. Further, the scheme Governance Board through its strategic role will be best placed to provide the strategic directives to the Managing Agency to support the schemes operation and goals as well as community and environmental based initiatives.

In the case of the Alberta container return scheme, the Beverage Container Management Board (BCMB) (i.e., scheme governance board) establishes the business plan (in accordance with the Alberta Beverage Container Recycling Regulation 101/1997) to provide strategic guidance for the scheme under the management of the Alberta Container Recycling Corporation (ABCRC). The most recent business plan being for the 3-year period from 2018 to 2020. In this business plan, the BCMB sets out the vision, goals, objectives, strategies and key performance indicators (KPIs) to help achieve the broader Alberta State vision; ‘for a healthy and clean province where Albertans are leaders in environmental conservation and protection, enjoy sustainable economic prosperity and a great quality of life’<sup>999</sup>. The strategic plan also focusses on enhancing and strengthening the core scheme business functions while continuing to ensure that the BCMB continues to demonstrate alignment from mandate to end reporting supported by stakeholders.

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*Scheme Governance Boards commonly provide the strategic plan and objectives to support the Managing Agency to implement specific programs and initiatives to maintain and improve scheme performance.*

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Of note, the BCMB’s vision and mandate as discussed above is achieved through five (5) interconnected goals for the Alberta container return scheme and which is illustrated in Figure 59 below. It is important to note here that the below schematic was developed in agreement by the BCMB, Alberta Depots, Alberta Beverage Container Recycling Corporation (ABCRC) and the Alberta Beverage Depot Association (ABDA).



Figure 59: Alberta Beverage Container Management Board vision and goals<sup>1000</sup>

<sup>999</sup> Beverage Container Management Board Three Year Business Plan: January 1, 2018 to December 31, 2020

<sup>1000</sup> Beverage Container Management Board Three Year Business Plan: January 1, 2018 to December 31, 2020

Importantly, the BCMB whilst providing the strategic direction to the Alberta container return scheme, also collaborates with the ABCRC and the Alberta Bottle Depot Association (ABDA) to focus on environmental protection, system transparency and accountability, and providing quality service to the public. The collaboration between the three (3) scheme organisations means interconnectedness, shared goals and visions and integration of a range of skills (e.g., social, environmental, economic) to ensure continual development of the scheme.

Also, of note is the focus of the BCMB 3-year business plan which is to continue to secure strong alignment among scheme stakeholders through the following means:

- Continued collaboration and increased information sharing with BCMB stakeholders;
- Continued effort to strengthen the review process;
- The creation of transparent and fair compliance framework that is communicated openly and applied consistently across all system areas;
- Best practices and education with a goal to better utilise tools such as e-learning modules, conferences and the BCMB website; and
- Protecting Alberta’s beverage container system by enhancing the container registration process and by monitoring and evaluating stakeholder performance.

To develop and enact the above listed core business plan focus areas, the BCMB governance board has established short-, mid- and long-term activities to ensure the business goals can be measured and initiatives held to account. Broadly, the short- to mid-term goals are projects undertaken by the BCMB to respond to a need or opportunity in the industry as well as creating and/or evaluating the effectiveness or efficiency and generate awareness or to develop meaningful standards for the purposes of programme development. The long-term goals are designed to meet mandate and regulatory functions of the BCMB<sup>1001</sup>.

Further, accountability to stakeholders also requires the integration of review periods to critically assess the progress and strategic direction of a container return scheme. In the case of the BCMB, bi-annual reviews are undertaken of the governance outcomes, key strategies and value statements reported in the 3-year business plan.

While the above text generally describes the accountability measures within the scheme and to the Alberta Government, the BCMB Governance Board through business plans, annual reports and the organisation website, also provides transparent information and data to the consumer. The benefit of this is the ability for the consumer to engage with scheme operations and performance.

## 15.6 Innovation

Innovations are an important aspect of continual improvement processes, including the development and implementation of more effective programs in container return schemes. Where information was available, scheme Governance Boards commonly provide the strategic plan and objectives to support the Managing Agency to implement specific programs and initiatives to maintain and improve scheme performance (e.g., return rates, promoting and encouraging the use of refillables in Aotearoa New Zealand).

Consequently, incorporating innovation and processes for continual scheme improvement will be a vital component in the NZ CRS design to ensure that the scheme provides a ‘best for New Zealand approach’ whilst ensuring that scheme policies and guidelines are aligned, where possible, to the outcomes of continual improvement assessments.

<sup>1001</sup> Beverage Container Management Board Three Year Business Plan: January 1, 2018 to December 31, 2020

The following case study from Alberta describes how the Governance Board supports continual scheme innovations and scheme improvements by undertaking annual work programmes and surveys to identify areas of scheme improvement.

### 15.6.1 Alberta Case Study

To ensure the continued development of the Alberta container return scheme, the Beverage Container Management Board (BCMB) carries out a range of industry research projects as well as surveys to help facilitate continued improvement. Examples of industry research reports and surveys<sup>1002</sup> are as follows including a high-level summary of key report and survey recommendations.

- Industry Research
  - Economic benefit of the recycling sector
    - Recommendations for scheme improvement include:
      - a process requiring all scheme participants involved in the collection, transportation and processing of waste and recyclables to record and annually report key waste flow data to support development and implementation of more effective policies and programs
      - Implementation of a 5-10-year delivery strategy based on detailed cost benefit analysis to help grow the Alberta economy and help to establish markets for materials collected and ensure collection and processing can meet the specifications, where possible, of local manufacturers
  - Managing end-use recycling outcomes in Alberta
    - The objective of this report was to provide the BCMB with the understanding and tools to manage and improve the end-use recycling outcome of the Alberta beverage container recycling program. The following recommendations were proposed:
      - enhance the quality and marketability of processed materials by addressing contamination concerns through an updated registration process that is conducted on a rolling 5-year basis rather than as a one-time approval
      - implementation of Key Performance Indicators (KPIs) across the scheme (e.g., recycling rate, collection rate, programme loss, avoided greenhouse gas emissions)
      - implementation of a cross-material framework for continuous registration of new and existing beverage container designs in terms of compatibility with existing recycling pathways and to provide BCMB with information to inform the container approval process.
  - Small depot viability
    - Recommendations included accessing the variables that impact small depot profitability, understanding the relationships between each variable and any policies or standards that affect them, assessing population and material volumes to assess small depot viability, assessment of depot cannibalisation where volumes have increased in one depot compared to neighbouring depots.
- Surveys
  - Beverage container recycling – survey of Albertans
    - The purpose of the 2020 survey was to gain an understanding of how the average Albertan household conducts their recycling of beverage containers and what their opinion is on the process. The findings of the survey reported of

<sup>1002</sup> <https://www.bcmb.ab.ca/about/research/>



- those Albertans surveyed 10% suggested the acceptance of more types of containers, 7% suggested improving various aspects of bottle depots, 6% suggesting better educating of the public and 4% suggested making the scheme more convenient<sup>1003</sup>. 72% of those surveyed also supported the expansion of the service and have bottle depots accept more recyclable items besides beverage containers (refer to the 2020 survey for further detailed information).
- Depot exit interview survey (i.e., survey of consumers leaving the depot after container return)
    - The most common ways that customers learned to take containers back to depots were being taught by family and learning as a child. Suggestions for scheme improvement varied widely, with the most common suggestions related to making more parking available and additional lines / stations / windows / stalls / lanes / bays to return beverage containers. Other suggestions included improving cleanliness, increasing space, extending hours, and increasing speed of service.
  - Depot satisfaction survey
    - Depot operators had a generally high satisfaction with the level of communication available with the BCMB and ABCRC but this was reported to have dropped slightly indicating the importance of maintaining strong communication between scheme participants.

## 15.7 The New Zealand Container Return Scheme Governance Board

To determine the Governance Board options of the NZ CRS, PwC was commissioned in 2020 to undertake a preliminary investigation into a range of organisational form and governance options for the NZ CRS taking into consideration the NZ CRS research and NZ CRS design objectives. The results of the PwC work and feedback received from the NZ CRS Scheme Design Working Group (SDWG) are discussed below. For clarity, Section 15 will discuss the NZ CRS Managing Agency Governance Board options only, with the organisational form discussed previously in Section 14.9.

For the purpose of clarity and which has been noted previously in Section 14.9, The NZ CRS Managing Agency and Governance Board is referred to as a single organisation with a clear separation between the management (i.e., operation, performance and executive management) and governance functions (i.e., scheme Governance Board, strategic direction, and legislative accountability). Further, the following discussion will, for clarity, separate the Managing Agency Governance functions from the Managing Agency operational and performance functions. The NZ CRS Governance Board structure is provided at the end of this section.

To determine the range of Managing Agency Governance Board options, several assumptions were established regarding the roles and responsibilities that underpin the NZ CRS Managing Agency (including the organisational form and Governance Board):

- The Managing Agency is responsible for overseeing the operation and performance of the NZ CRS;
- The Managing Agency seeks to advance economic, environmental, social and cultural outcomes. Recognising these outcomes do not always complement one another entirely, the agency will seek to find an optimal balance across these dimensions;
- The Managing Agency is a not-for-profit, meaning any surpluses generated in the course of its operations must be reinvested in the objectives of the organisation, and/or reduce scheme fees.

<sup>1003</sup> Beverage Container Recycling: A survey of Albertans 2020. BCMB 2020

- The Managing Agency is a single agency which oversees the scheme nationwide, rather than comprising multiple organisations;
- The Managing Agency may choose to own and operate elements of the scheme, or alternatively to procure (contract out) these services from the market (e.g., Material Consolidation Facility to consolidate and process eligible scheme containers);
- NZ CRS legislative instruments, Managing Agency constitution and Governance Board charter will guide the roles, responsibilities and obligations of the Managing Agency, including aligning with and upholding the principles of Te Tiriti o Waitangi – The Treaty of Waitangi;
- The NZ CRS Managing Agency Governance Board will be required to act in the best interests of the entity, including in line with the NZ CRS legislative instruments;
- NZ CRS Managing Agency Governance Board members will be independent – members will have no material investments in the NZ CRS Managing Agency, nor are they employees of organisations closely involved with the NZ CRS (including industry, central or local government);
- Where NZ CRS Managing Agency members are appointed to represent a group, their duty is to make decisions in the interests of the Managing Agency; and
- Standard roles and responsibilities of the NZ CRS Managing Agency governance function will apply (see Section 14 for further discussion).

Further, the responsibility for the scheme legislative instruments and for oversight of the performance of the NZ CRS is anticipated to fall with central government. While it is not yet confirmed which government department will be responsible for this role, the Manatū Mō Te Taiao - Ministry for the Environment has been included here for the purpose of establishing the NZ CRS Governance Board options.

As discussed in the introduction to Section 14, the NZ CRS Managing Agency and Governance Board is referred to as a single organisation with clear separation between the management (i.e., operation, performance and executive management) and governance functions (i.e., scheme Governance Board, strategic direction, and legislative accountability). It is also important to note here that the findings of the PwC report noted that the majority of Governance Board members are to be independent, that is that they have no material interests in the Managing Agency nor are they employees of organisations closely involved with the scheme (including industry, central or local government). Where members are appointed to represent a group, their duty is to make decisions in the interests of the Managing Agency.

For clarity and ease of reading, the below schematic Figure 60 has been reproduced to illustrate the high-level form of the NZ CRS and the broad components of the Managing Agency comprising:

- The Managing Agency Governance Board
  - To provide strategic direction to the Managing Agency, ensure the NZ CRS delivers on its goals and objectives, compliance with any bespoke NZ CRS legislative instruments and be accountable to the Government of the day and all scheme participants, including the consumer. The Managing Agency Governance Board would delegate operational matters to the Managing Agency Chief Executive Officer. The Governance Board would comprise skills, experience and expertise from, but not limited to the interests of, Iwi, recyclers, financial, regulatory, customer, retail, community, waste sector, local government, beverage, experienced strategists and other stakeholders.
- The Managing Agency Executive Management Team
  - Oversees the operation and performance of the NZ CRS, including the Managing Agency Operations Team. The Executive Management Team will comprise, for example, the Chief Executive Officer, Chief Financial Manager, Operations Manager, Marketing and Communications Manager, Sustainability/Environment Manager, Audit and Risk Manager.
- The Managing Agency Operations Team

- The Managing Agency staff including the 16 Regional Coordinators to provide the day-to-day activities and help the Managing Agency perform its duties. The Operations Team will be led by a team of operational managers comprising, for example, Logistics Manager, Audit and Compliance Manager, Finance Manager, IT Manager, Communications Manager, Community Engagement Manager and Regional Coordinator Manager. The Operations Team Managers will be accountable to the Executive Management Team.
- 16 Regional Coordinators
  - Aotearoa New Zealand comprises 16 territorial regions (including the Chatham Islands), some of which comprise rural and remote communities. As such, 16 regional coordinators are included to provide region specific scheme coordination by providing regions with a local coordinator that can, for example, carry out scheme specific regional activities and quickly respond to and address scheme related matters, liaise with Mana Whenua and interface with local community organisations. The intent of the regional coordinators is to provide the regions with a coordinator that is familiar with the region and who will preferably have an established network of contacts in the respective region to facilitate scheme activities including community and consumer engagement.

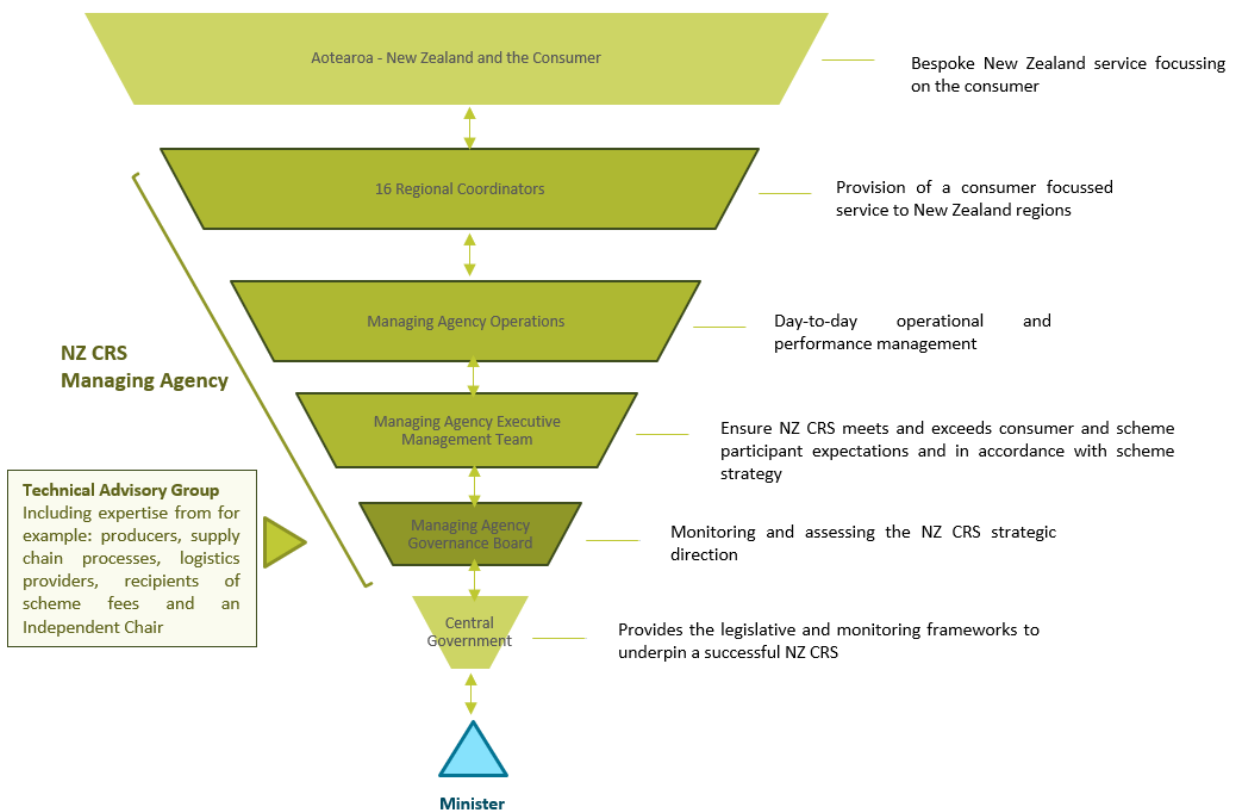
The schematic also illustrates the relationship and interface with central government, with the Managing Agency ultimately providing a service to Aotearoa New Zealand and the consumer:

- Central Government
  - Responsible for regulating the NZ CRS, overseeing and monitoring the schemes performance. Central Government will also be responsible for ensuring the NZ CRS Governance Board delivers on its goals and objectives, complies with any bespoke NZ CRS legislative instruments, and is accountable to the Government of the day and all scheme participants, including the consumer.
- Aotearoa New Zealand and the Consumer
  - To engage with the NZ CRS and hold the NZ CRS Managing Agency, including the Governance Board accountable for providing a service that includes, but is not limited to, a convenient and accessible service and one that engages and encourages active consumer participation. Community and/or consumer interests are core to the NZ CRS and it is considered critically important for the NZ CRS Managing Agency to ensure regular and open dialogue with the community and consumers as a key function of the Managing Agency rather than a formal part of the Governance Board. The reasons for this include the ability for the Managing Agency operational team and regional coordinators to more effectively engage with the community and/or consumer through day-to-day activities of the scheme.
- Technical Advisory Group (TAG)
  - The inclusion of a TAG is in alignment with the Manatū Mō Te Taiao - Ministry for the Environment General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020. Acknowledging the breadth and depth of knowledge and experience from across a wide range of Aotearoa New Zealand sectors that would be beneficial to support the operation and performance of the NZ CRS. International representation may also be considered to ensure the NZ CRS Governance Board has access to experience gained from a range of global schemes (e.g., Canada, Australia, Europe) including potential innovations in scheme operation.

Further, while the specific details regarding the Technical Advisory Group (TAG) are yet to be confirmed, it is anticipated that the primary role of the TAG will be to provide expert input and guidance to the

NZ CRS Governance Board. It is anticipated that the TAG will comprise representatives from, for example, producers, supply chain processes, logistics providers and recipients of scheme fees including an Independent Chair. Given the significance of the NZ CRS, particularly in providing consumers with a convenient, accessible and consumer focussed service, it is expected that the TAG will remain in place permanently with appropriate tenureship review periods (e.g., every 3 to 5-years to align with the NZ CRS scheme review period) to ensure the NZ CRS Governance Board has access to Aotearoa New Zealand and international expertise (e.g., global container return scheme experts). Acknowledging SDWG feedback, it is recognised that involvement of the TAG would be particularly beneficial in the first 3 to 5-years during the NZ CRS establishment stage to help inform decision making by the Governance Board. While the TAG has been shown in Figure 60 below to provide expert input and guidance to the NZ CRS Governance Board only, there is an opportunity for the TAG to also provide guidance to the Central Government department responsible for ensuring the NZ CRS Governance Board delivers on its goals and objectives. Further, while the structure of the Managing Agency Governance Board is yet to be confirmed (see indicative option scenarios below), the TAG may also include local government representation where it is not directly involved in the NZ CRS Governance Board. Further, the Government of the day will appoint members of the TAG as it deems appropriate based on the advice it requires at that point in time.

In addition to a TAG, the Manatū Mō Te Taiao - Ministry for the Environment General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020 also recommends the potential inclusion of an advisory group comprising stakeholders who represent wider community and consumer interests. For the purpose of the below schematic, only the TAG is illustrated but this could be expanded to include an additional advisory group comprising stakeholders who represent wider community and consumer interests.



**Figure 60: Schematic illustrating the broad structure and relationships of the New Zealand Container Return Scheme Managing Agency Organisation**

To determine the NZ CRS Managing Agency Governance Board options, PwC took the findings of the NZ CRS design components, Australian container return scheme survey summary findings<sup>1004</sup> and PwC expertise and knowledge of organisational form and governance to help inform the selection of several Governance Board option scenarios for initial consideration by the SDWG. Additionally, the option scenarios looked at whether the Governance Board scenario promoted the four (4) pillars of social, commercial and environmental objectives all underpinned by a cultural framework. Following feedback received from the SDWG regarding the application of the four (4) pillars across Aotearoa New Zealand businesses and the respective understanding of these pillars, the recommendation was to instead adopt the Te Tai Ōhanga – The Treasury Living Standards Framework (LSF) which represents Te Tai Ōhanga – The Treasury’s perspective on what matters for New Zealanders’ wellbeing, now and into the future - natural capital, human capital, social capital and financial / physical capital. Figure 61 below (presented in the Section 15 Introduction) has been reproduced for ease of reading to provide clarity on the Te Tai Ōhanga – The Treasury Living Standards Framework definitions.



**Figure 61: The living standards framework**<sup>1005</sup>

The intent of the indicative Managing Agency Governance Board option scenarios was to provide a starting point for SDWG discussion and feedback.

Underpinning the option scenarios was the acknowledgement and recognition that those who are likely to be impacted by, or who may benefit from, a NZ CRS, are ultimately the people of Aotearoa New Zealand. Consequently, the governance option selected for a NZ CRS must be able to support the Managing Agency to deliver a successful scheme for the benefit of Aotearoa New Zealand. Additionally, the option scenarios developed by PwC were assessed through the lens of social, economic and environmental impact, underpinned by a NZ CRS that is grounded in a cultural setting that recognises the unique bi-cultural status of Aotearoa New Zealand including upholding and aligning with Te Tiriti o Waitangi – The Treaty of Waitangi.

Further, broad feedback received noted that the NZ CRS Managing Agency Governance Board should reflect the aims and objectives of the NZ CRS, which as discussed in Section 1 are as follows:

1. Change the way Aotearoa New Zealand values beverage containers that will see increased hangarua - recycling and new opportunities for refilling;

<sup>1004</sup> Survey of Australian Container return Schemes, 2020. New Zealand Container Return Scheme confidential survey

<sup>1005</sup> <https://treasury.govt.nz/information-and-services/nz-economy/higher-living-standards/our-living-standards-framework>

2. Reduce the volume of plastics and other container litter currently ending up in our streams (i.e., awa – waterways), moana - marine environment, wāhi tūmatanui - public spaces and ruapara - landfills; and
3. Give effect to ōhanga āmiomio - circular economy outcomes and any future priority product guidelines.

In addition to the above three (3) aims and objectives, the NZ CRS is to where possible give effect to the following key guiding design principles:

- Make it easy and convenient to return containers across Aotearoa New Zealand;
- A solution that is cost effective and efficient;
- Improve the quality and marketability of recyclables and assess the impact of the NZ CRS design on current kerbside and other collection and processing systems;
- Create new opportunities for employment, community participation and fund-raising for charities and social enterprises.
- Use technology and innovations to optimise performance of the NZ CRS;
- Support greater investment in remanufacturing and regional development;
- Align objectives with Te Tiriti o Waitangi – The Treaty of Waitangi and Te Ao Māori; and
- Where able mitigate climate change.

As noted in Section 14 , the Governance Board must also take into account potential and/or perceived conflicts of interest that may arise from entities/individuals that may stand to benefit/profit from the operation of the scheme. Additionally, the structure of the Governance Board and potential and/or perceived conflicts of interest regarding membership (e.g., industry, local government, central government) requires further detailed investigation during the NZ CRS implementation stage in order to determine the preferred structure for the NZ CRS.

In order to provide the SDWG with a series of Governance Board scenario options to consider, PwC developed seven (7) Managing Agency Governance Board option scenarios for initial consideration. The method of Board appointment is specific to the governance option (e.g., Central Government Governance Board to be appointed by the New Zealand Government, such as, the Minister for the Environment). However, it is important to note here that irrespective of who appoints the Managing Agency Governance Board members, the duty of the members is to make decisions in the interests of the NZ CRS Managing Agency. Additionally, the expectation is that members of the Governance Board together will need to bring the right mix of skills, personal qualities, tikanga whakapapa and cultural values relating to the Managing Agency organisation.

The initial seven (7) identified NZ CRS Managing Agency Governance Board option scenarios identified include and are discussed in more detail in Appendix H.

- Option 1: Central Government appointed;
- Option 2: Local Government appointed;
- Option 3: Industry appointed;
- Option 4: Central Government and Local Government appointed;
- Option 5: Central Government and Industry appointed;
- Option 6: Local Government and Industry appointed; and
- Option 7: Central Government, Local Government and Industry appointed.

In addition to the seven (7) option scenarios, central government was also considered in an observer role on the Managing Agency Governance Board. In this role, central government would have no formal voting rights but would be able to provide input and influence. The benefits of this arrangement include central government having visibility of scheme performance as reported by the Governance Board and the potential reduction of any conflict of interest issues. Additionally, PwC considered a central

government ex-officio arrangement where central government is a member of the Managing Agency Governance Board by virtue of its role. In this case the rights of an ex-officio member were the same as other members unless stated otherwise in the organisation's constitution.

In general terms, the make-up of the Managing Agency Governance Board membership will reflect the Te Tai Ōhanga – The Treasury Living Standards Framework which may be set out as follows:

- Tangata Whenua representation;
- Commercial interests represented by, for example, industry including producers, retailers and recyclers;
- Social interests represented by, for example, community groups, local authorities and central government
- Environmental interests represented by, for example, kaitiakitanga whakanaonga - product stewardship groups, the Zero Waste network; and environmental groups.

As discussed earlier in this section, the role of the Managing Agency Governance Board is to provide strategic direction to the Managing Agency, ensure the NZ CRS delivers on its goals and objectives, compliance with any bespoke NZ CRS legislative instruments and be accountable to the Government of the day and all scheme participants, including the consumer. The Managing Agency Governance Board would delegate operational matters to the Managing Agency Chief Executive Officer.

Regarding the make-up of the Managing Agency Governance Board, specifically regarding the number of members, the options scenario process looked at a number of examples to inform the NZ CRS option scenarios, including consulting the Institute of Directors recommendations. The outcome of this process was, on balance, the identification of an odd number of Governance Board members which was preferred to expedite decisions if required. Additionally, in an odd numbered Governance Board arrangement, the Independent Board Chair would have the casting vote which avoids decisions being gridlocked. In contrast, an even number of Governance Board members encourages consensus amongst a majority. In terms of the number of Governance Board members, 5-7-members were included where a single entity (e.g., central government) was responsible for appointing members, with a 9-member Governance Board under a mixed option scenario (e.g., central government, local government and industry). Feedback received from the SDWG also generally supported an odd numbered Governance Board comprising 9-members.

On balance, and acknowledging the feedback received from the SDWG and TAG regarding the Governance Board structure and make-up, the NZ CRS Governance Board (including an Independent Board Chair) is to be appointed by central government with control through appropriate legislative frameworks. The Governance Board will comprise 9-government appointed members (including an Independent Board Chair and representation from, but not limited to, Iwi, recyclers, financial, regulatory, customer, retail, community, waste sector, local government, beverage, experienced strategists and other stakeholders as well as the Managing Agency Chief Executive Officer) and be aligned to the representation of the Te Tai Ōhanga – The Treasury Living Standards Framework (i.e., Natural Capital, Social Capital, Human Capital and Financial/Physical Capital), including upholding Te Tiriti o Waitangi – The Treaty of Waitangi. The benefit of a 9-member Governance Board includes, but is not limited to, the ability for different industry groups to be represented. Notwithstanding the diverse make-up of the governance board, members are selected for the skills and experience and expertise they bring.

Further, the above landing on the NZ CRS governance structure aligns with the requirements of the General Guidelines for Product Stewardship Schemes for Priority Product Notice 2020. Specifically, the NZ CRS Governance aligns with the requirements of 'Directors and Governance Boards' whereby the Governance of the NZ CRS will ensure it represents the interests of producers, consumers and the wider community noting that the wider community includes, but is not limited to, local government, Iwi,

environmental non-government organisations. The Governance requirements as noted in the General Guidelines for Product Stewardship Schemes for Priority Product Notice 2020 are as follows:

- Governance
  - The scheme will be managed by a legally registered not-for-profit entity.
  - Annual independent audits will be conducted on scheme performance and included in scheme's annual reports to the Ministry for the Environment. The annual reports must contain the following:
    - i. financial performance and scheme cost-effectiveness;
    - ii. environmental performance; and
    - iii. agreements with scheme service providers.
  - Governance arrangements will be established for the initial set up and ongoing development and operation of the scheme that are appropriate to the size and scale of the scheme.
  - All governance activities will adhere to the Commerce Commission guidelines on collaborative activities between competitors, including but not limited to considering the option of applying for collaborative activity clearance from the Commission for the scheme.
  - The scheme will be the only accredited scheme for that product, or
    - i. have agreements in place with other scheme managers to enable cooperation and cost-effective materials handling and to prevent confusion for household and business consumers; and
    - ii. demonstrate how net community and environmental benefit (including cost-effectiveness and non-monetary impacts) will result from multiple schemes for that priority product.
  - Directors or governance boards will:
    - i. be appointed through an open and transparent process
    - ii. represent the interests of producers and consumers of the priority product and the wider community as informed by stakeholder advisory groups; and
    - iii. follow governance best practice guidelines, for example the Institute of Directors of New Zealand Code of Practice for Directors, including for the identification and management of conflicts of interest.

Further, a critical component of Governance Board membership is the appointment process. Noting the NZ CRS Governance Board will be appointed by central government with control provided through appropriate legislative instruments, it is proposed that the nomination process as used for the Manatū Mō Te Taiao - Ministry for the Environment Waste Advisory Board be used as the starting point. Briefly, the Waste Advisory Board nomination process is as follows<sup>1006</sup>:

- Nominations are made via a formal nomination process via an application form with all required information to follow the requirements of the Cabinet Appointments and Honours Committee CV template.
- All nominations, together with a suggested short-list and recommendations from the Ministry are provided to the Minister for the Environment for consideration.
- After consulting the Minister of Māori Development, the Minister will take their own recommendations to the Appointments and Honours Committee of Cabinet.
- Cabinet makes the final appointment(s) decision.

<sup>1006</sup> <https://www.mfe.govt.nz/waste/we-all-have-role-play/waste-advisory-board/how-make-nomination>



- Appointments to the board are notified in the New Zealand Gazette and on the Manatū Mō Te Taiao - Ministry for the Environment website. All nominees and those who nominated them are informed of the outcome in writing.

Further, the NZ CRS Managing Agency Governance Board must also have regard to the appropriate legislative instruments (e.g., WMA 2008) which provide the foundation to establish, mandate and govern Kaitiakitanga Whakanaonga - Product Stewardship schemes (refer Section 13 for further discussion).

As such, the NZ CRS Managing Agency organisational form needs to be guided by and reflect the above scheme aims and objectives by ensuring the Managing Agency Governance Board structure and sector representation best reflect the needs of Aotearoa New Zealand and ultimately the consumer.

Further, we acknowledge feedback received suggesting that the NZ CRS would benefit from closer alignment with the Australian schemes, particularly the Queensland container return scheme. However, it is important to reiterate here that the intent of the NZ CRS Design process was 'to develop the best scheme based on best international practice and that is bespoke to Aotearoa New Zealand and developed in alignment with social, cultural, economic and environmental scheme outcomes.' For the purpose of clarity and to distinguish the NZ CRS Design from the Queensland scheme, it is important to note here the following differences:

### **Governance Board**

The Governance Board make-up will be a diverse group of people based on the skills, experience and expertise they bring and will represent, as a minimum the following areas:

- 9-government appointed members (including an Independent Board Chair and representation from, but not limited to the interests of, Iwi, recyclers, financial, regulatory, customer, retail, community, waste sector, local government, beverage, experienced strategists and other stakeholders as well as the Managing Agency Chief Executive Officer) and be aligned to the representation of the Te Tai Ōhanga – The Treasury Living Standards Framework (i.e., Natural Capital, Social Capital, Human Capital and Financial/Physical Capital), including upholding Te Tiriti o Waitangi – The Treaty of Waitangi. Central government will appoint the scheme Governance Board with control applied through appropriate legislative frameworks.

The NZ CRS Governance Board make-up differs to the strong beverage producer representation as seen in the Queensland container return scheme to ensure the NZ CRS benefits from a diverse range of skills and experience. Further, under the Queensland container return scheme, Board members are approved by the Government.

Therefore, the government appointment of NZ CRS Governance Board members gives greater empowerment and responsibility to the government of the day to ensure the make-up of the Board reflects the current and future needs of Aotearoa New Zealand. It should be noted that the 'appointment' of directors to the NZ CRS Governance Board does not mean that the government has any greater or lesser control of the scheme Managing Agency that if it has 'approved' the Governance Board members. Any control by the government is via the bespoke scheme legislation and provisions within this to intervene with appropriate measures, should that be required. These measures could include, for example, replacing one (1) or more Governance Board members.

### **Legislation**

As has been discussed throughout previous sections, it is acknowledged that a bespoke NZ CRS legislative instrument is anticipated to support the establishment, operation and ultimate success of the

scheme. Compared with the Queensland container return scheme, the NZ CRS legislative instrument will:

- Clearly define roles and responsibilities of the board and government.
- Require greater transparency of information than what has been required or reported in the Queensland scheme.
- Stipulate the consequences for the Board not delivering on targets including, for example, the appointment of independent commissioners and or replacing Board members. While the Queensland scheme enables the government to ‘dismiss’ the scheme operator for not achieving the minimum target of 85% in practice, it is acknowledged that this will not be applied given the difficulty to effectively appoint and establish an alternative scheme operator.
- Align and uphold the principles of Te Tiriti o Waitangi – The Treaty of Waitangi.
- The NZ CRS legislative instrument will not stipulate by name any individual and/or organisation who will be a member of the scheme Managing Agency and/or Governance Board.

### Transparency

Transparency of information is a critical component in a successful scheme and applies to all scheme participants, including the consumer. As such, and in comparison, to the Queensland container return scheme, the NZ CRS will provide greater transparency to the consumer purchasing scheme eligible beverage containers – in keeping with the findings of the ConsumerNZ survey (see Section 6). Additionally, the NZ CRS will also openly communicate scheme performance data such as monthly container sales and container return rates commencing from day one (1) of the scheme (i.e., scheme ‘go-live’ date).

### Scheme Performance

A critical element in the design of the NZ CRS is ensuring that the scheme Managing Agency and Governance Board maximise the scheme performance by consistently working to maximise container return rates in keeping with the key outcomes of the NZ CRS design and as stipulated in the bespoke NZ CRS legislative instrument. Therefore, there must not be a commercial incentive that restrains the scheme from doing better than it could be to drive or promote high container return rates (i.e., a scheme that has lower container return rates and is not overly successful). To emphasize this point and using the NZ CRS NZD10-cent and NZD20-cent deposit level and assuming a 1% scheme underperformance, the savings to the beverage producer are approximately:

- Under a NZD10-cent deposit, for every 1% of scheme underperformance the beverage producer saves approximately NZD\$4.7million.
- Under a NZD20-cent deposit, for every 1% of scheme underperformance the beverage producer saves approximately NZD\$7.0million.

For these reasons the NZ CRS Governance Board must be free of this conflict and focused on what is best for Aotearoa New Zealand. This requires wide representation of stakeholders as described above.

## 15.7.1 Establishment of a New Zealand Container Return Scheme Implementation Governance Board and Interim Chief Executive

Acknowledging there is expected to be a period of time between the NZ CRS Implementation stage and the ‘go-live’ date of the scheme, central government (i.e., the Manatū Mō Te Taiao - Ministry for the Environment) will be responsible for appointing an Implementation Governance Board, including a Governance Board Chair, to oversee the establishment of the NZ CRS Managing Agency and assist the team tasked with the NZ CRS implementation (e.g., risk and compliance documentation, container return facility toolkit). Additionally, central government (i.e., the Manatū Mō Te Taiao - Ministry for the

Environment) and the Implementation Governance Board will appoint an interim Managing Agency Chief Executive to set up the NZ CRS Managing Agency.

The Implementation Governance Board are to be aligned to the representation of the Te Tai Ōhanga – The Treasury Living Standards Framework (i.e., Natural Capital, Social Capital, Human Capital and Financial/Physical Capital), including upholding Te Tiriti o Waitangi – The Treaty of Waitangi. Further, central government (i.e., the Manatū Mō Te Taiao - Ministry for the Environment) and the Implementation Governance Board will appoint an interim Managing Agency Chief Executive who is also aligned with the representation of the Te Tai Ōhanga – The Treasury Living Standards Framework (i.e., Natural Capital, Social Capital, Human Capital and Financial/Physical Capital), including upholding Te Tiriti o Waitangi – The Treaty of Waitangi to set up the Managing Agency. It is important to note here that any formal authority granted to the Implementation Governance Board or the interim Chief Executive will be via the Minister of the day (presumably the Minister for the Environment).

It is also recognised that a series of key components are required to ensure the efficient and effective development and implementation of the NZ CRS and to facilitate a scheme ‘go live’ date, including:

- Appoint an Implementation Governance Board and interim Managing Agency Chief Executive;
- Agree a set of principles to guide the implementation of the NZ CRS;
  - As noted by PwC, A key principle frequently used to guide the establishment of organisations is ‘do the minimum that is required to ensure the organisation can operate on day one’. Decisions beyond the ‘do minimum’ may take permanent management down a track which is not desired, and which interim governance and management don’t necessarily have the powers to make. The permanent management of the organisation require the flexibility to make the right decisions for the organisation on the basis of what is likely to be better information than interim management will have. It is important the permanent management and governance functions are not encumbered by constraints implemented during the establishment phase.
- Establish the NZ CRS funding arrangements;
  - To support the implementation of the scheme, for example, infrastructure builds and/or retrofitting existing infrastructure. Should central government fund part or all establishment costs, a non-departmental output appropriation would need to be set up, along with the appropriate controls over expenditure.
- Establish the appropriate NZ CRS legislative instruments; and
  - Establish bespoke NZ CRS legislative instruments to provide the necessary clarity to all scheme participants on their respective roles, responsibilities, and importantly, requirements of the scheme to meet consumer expectations.
- Develop operating policies and procedures.
  - Establishment of minimum policies and procedures to operate the NZ CRS in line with the NZ CRS legislative instruments, including but not limited to:
    - Health and Safety plans and procedures.
    - Procurement of scheme related goods and services.
    - Scheme licensing and registration procedures.
    - Scheme revenue sharing arrangements between the MRF operator and the Territorial Local Authority.
    - IT and accounting processes.
    - Marketing and communication material.
    - Human resources, including payment of wages and salaries.
    - Compliance, risk and audit procedures.
    - Development of standard operating procedures. This includes for example how imports and exports will be managed by the scheme.

Further, recognising the expertise and experience available throughout the range of stakeholders, the Implementation Governance Board will be appointed under a temporary basis only, with only the interim Chief Executive having a role on the permanent Managing Agency Governance Board. All other Implementation Governance Board members can be nominated to the Managing Agency Governance Board following the process discussed above (i.e., following the Manatū Mō Te Taiao - Ministry for the Environment Waste Advisory Board nomination process). This process will ensure equality amongst stakeholders and provide interested parties with equal opportunity to be nominated.

### 15.7.2 New Zealand Container Return Scheme Governance Board Responsibilities

Taking into consideration the available global container return scheme information and acknowledging the importance and significance of the NZ CRS Managing Agency Governance Board to provide the strategic directives to the Managing Agency Executive Management Team (i.e., to support the schemes operation and goals as well as community and environmental based initiatives), it is important to provide a brief summary of the anticipated structure and responsibilities recommended for the NZ CRS Managing Agency Governance Board<sup>1007</sup>.

- Aligning and upholding the principles of the Te Tiriti o Waitangi;
- Ensuring the scheme delivers on its goals and objectives;
- Compliance with any bespoke NZ CRS legislative instruments;
- Recruitment of the Managing Agency Chief Executive Officer;
- Strategic direction of the Managing Agency;
- Budget approval;
- Accountability to the Government of the day;
- Accountability to all NZ CRS scheme participants; and
- Accountability for continuous advancement of the NZ CRS.

The recommended structure and responsibilities of the NZ CRS Managing Agency Governance Board are the result of the Project Team considering the information, giving due consideration to the applicability of the recommendations in the Aotearoa New Zealand context and the objectives of the NZ CRS design process – to design a bespoke New Zealand Container Return Scheme. Additionally, feedback received from the SDWG and TAG has also been used to inform the responsibilities recommended for the NZ CRS Managing Agency Governance Board.

Further, the available global information, feedback received from both the SDWG and TAG supports the establishment of an appropriately structured Governance Board that is independent of the Managing Agency Executive Management Team, but within the overall structure of the NZ CRS Managing Agency. The NZ CRS Governance Board will be supported by a clear mandate that is distinct from the Managing Agency Executive Management Team. Figure 62 below provides a schematic of the indicative NZ CRS Managing Agency Governance Board. Additionally, the NZ CRS legislative instrument will set the roles and responsibilities of the Governance Board to provide clarity on scheme delivery expectations.

While the recommended roles and responsibilities of the NZ CRS Governance Board are consolidated in Section 18, it should be acknowledged that the implementation of a NZ CRS design will require alignment with existing legislative frameworks such as the New Zealand Waste Minimisation Act 2008 and the principles of Te Tiriti o Waitangi – The Treaty of Waitangi. Further, the Governance Board through its constitution (or equivalent) will include a requirement that it will align and uphold the principles of Te Tiriti o Waitangi – The Treaty of Waitangi. The following list provides a broad summary of the scheme Governance Board structure, roles and responsibilities:

<sup>1007</sup> PwC NZ CRS Preliminary Organisational Form and Governance Options 2020

- The scheme Governance Board will provide the strategic directives to the Managing Agency Executive Management Team to support the schemes operation and goals as well as community and environmental based initiatives;
- The scheme Governance Board is to be established separate from the scheme Managing Agency Executive Management Team but established within the structure of the NZ CRS Managing Agency; and
- The scheme Governance Board to comprise representatives, for example, experienced strategists, Mana Whenua and other stakeholders as well as the Managing Agency Chief Executive Officer to ensure that the schemes strategic direction is underpinned by social, economic, cultural and environmental outcomes.

Where appropriate, the NZ CRS may also require the establishment of bespoke legislative instruments, to allow for the effective implementation of the NZ CRS, but any such change will be the decision of and at the discretion of the New Zealand Government.

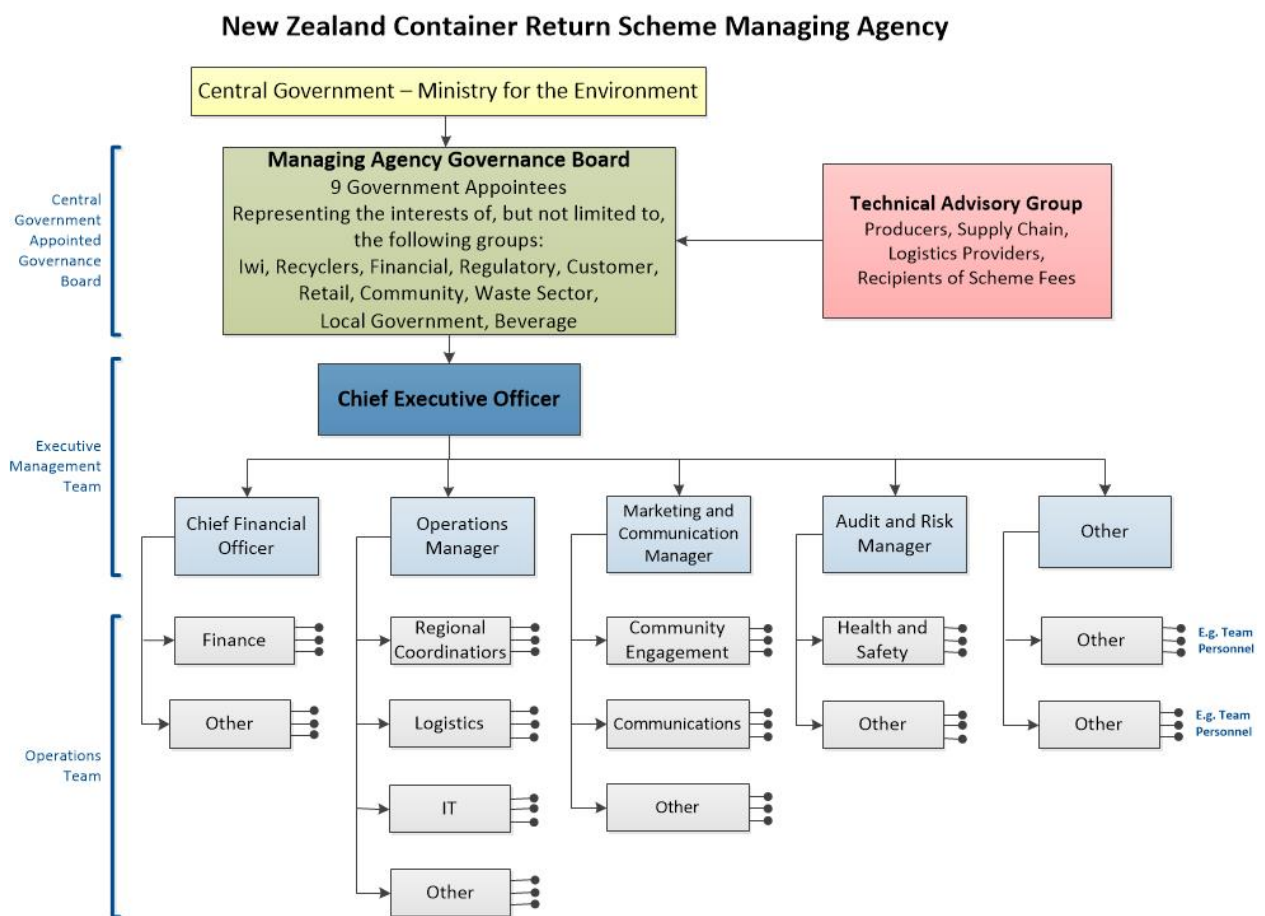


Figure 62: New Zealand Container Return Scheme Governance Board indicative organisational structure

## 15.8 Summary of Key Findings

The outcomes of the above research show that typically, scheme Governance Boards provide a pivotal strategic role in providing direction to the Managing Agency to support the development and continual improvement of the scheme while also being responsible for reporting to the respective government agency on scheme performance – a common requirement of prescribed container return scheme legislative instruments.

Considering the NZ CRS design, the structural arrangement of the Governance Board will be a critical element in the establishment of a container return scheme that is governed by a balanced group of suitably qualified and experienced members selected for the skills and expertise they bring to the table such as strategists. Of the case studies presented in this section, there is variability in the make-up and mandate of scheme Governance Boards. Notwithstanding all other influencing factors, the variability in Governance Board arrangement appears at a high-level to be related to the design of the scheme and whether the design is predominantly based on the 'polluter pays' (i.e., beverage industry absorbs the majority of scheme costs) or whether the design is based on passing scheme costs on to the consumer at the point of sale. Consequently, the basis of the scheme design has a resultant broad influence on the Governance Board membership. The 'polluter pays' design such as the Queensland (Section 15.1.3) and Danish (Section 15.1.1) scheme case studies, commonly includes a higher proportion of beverage industry representatives to ensure the opinions and views of the affected sector are considered and are well represented in the scheme function, compared to lower representation of other sector groups, such as retail, manufacturers, community and the public.

Interestingly, the Danish scheme in acknowledgement of the predominantly beverage industry focused Governance Board, established a separate legally mandated and independent 'contact group' representing a balanced cross-section of stakeholders, including the public, community, importers, cafés and restaurants, that are not represented on the scheme Governance Board. This additional 'contact group' has a similar function to the scheme Governance Board whereby scheme performance, financials, scheme projects, scheme operations, suggested legislated changes are reviewed and critiqued, with feedback provided to the scheme Governance Board to action. While the Danish scheme appears to provide for two (2) forms of a Governance Board, each appears deliver distinctly different functions focussing on (1) the beverage industry leading the strategic management of the scheme, and (2) the stakeholder 'contact group' critiquing the strategic direction and performance of the scheme while integrating community and public views directly into the schemes governance. The benefit of the Danish Governance model is that strategically the scheme benefits from the integration of both industry and wider stakeholder views and opinions to support its operation and performance, albeit achieved from the formation of two (2) Boards.

Where a scheme design is based on visibly passing costs on to the consumer at the point of sale (e.g., deposit, scheme fee, Advanced Material Recovery Fee), the Governance Board commonly comprises representation from the community, consumer, beverage industry, retailers, return facilities and manufacturers, with a similar strategic mandate as discussed in the Queensland and Danish cases above. In the case of Alberta (Section 15.1.2), this broad representation is used to encourage the consumer and community to actively participate in the governance of the scheme alongside representation from industry groups. While a diverse Board membership can at times provide a challenging environment within which to make decisions, diversity amongst the membership can enable more robust decisions to be made based on diversity of knowledge and experience. The benefit of a Governance Board that incorporates a diverse scheme membership is ensuring all scheme participants have an active voice in the strategic governance of the scheme.

Taking the above research into consideration, the following Governance Board conclusions can be drawn:

- The Governance Board in most cases is comprised of representatives from several stakeholder groups which may include beverage, retailers, consumers, community, local and central government to ensure that schemes strategic direction is underpinned by social, economic and environmental outcomes (Section 15.1);
- In many global container return schemes the Managing Agency and Governance Board are required via regulation to meet specific scheme targets (e.g., return rates and the number of container return facilities) which are used to measure scheme performance and provide

important data on which both the Managing Agency and Governance Board are held to account against(Section 15.1);

- Specific regulations provide the foundation of a container return scheme, with the Governance Board along with the respective Managing Agency commonly establishing a business plan to reflect the schemes strategic direction while including measurable indicators to support environmental, social and economic outcomes. For example, common strategic areas of reporting include, return rate performance against regulation and previous years data, establishment and development of container return facilities, tracking scheme generated greenhouse gas emissions, scheme employment numbers, distances travelled by material type to end-markets as well as fiscal indicators (Section 15.2);
- Along with transparency and accountability is the requirement for Governance Boards to ensure appropriate management of scheme finances, including setting of budgets and establishing appropriate approval processes. Where Government agencies were directly involved in the performance of the container return scheme, budgets would either be approved by the Government, or budgets reported to the government agency by the scheme Governance Board. Similarly, where budgets were developed by the Managing Agency, review and approval of these appeared to be carried out by the Governance Board under a charter reflecting scheme regulatory requirements (Section 15.3);
- While the processes for approving scheme finances (e.g., scheme budgets) was dependent on the scheme design and role and responsibility of the Managing Agency and Governance Board, it would appear that Government has an additional significant compliance role to play in both approving and/or scrutinising the financial records of the scheme (Section 15.3);
- Scheme performance measures including target container return rates are often included in regulation to provide a measure against which the Managing Agency and/or Governance Board can be held accountable against. To ensure these targets provide accountability, schemes have been reported to carry out annual surveys of scheme participants, including consumers, to provide clarity on whether the scheme requires a review and/or any amendments, or whether return rates have stagnated, supporting a review of the schemes regulation and/or an increase in deposit level (Section 15.4);
- The role of the scheme Governance Board in ensuring accountability to stakeholders including consumers is commonly through strategic oversight and performance measures of the Managing Agency, whereas the role of the Managing Agency is to provide visibility and transparency of scheme information, such as financial performance and return rates to scheme participants, including detailed scheme performance reports provided to the Governance Board (Section 15.4 and Section 15.5);
- The Governance Board commonly supports the Managing Agency through the development of strategic business plans which are set for a period of time (e.g., annual, bi-annual, three-years, 5-years). The purpose of the business plan is to set the overarching strategy to facilitate performance of the scheme as well as stabling a roadmap for continual scheme improvements (including the provision of stretch targets for the Managing Agency). The timeframe a business plan is established for is generally dependent on factors including, legislative directives, policies and business cycles (Section 15.5); and
- Container Return Scheme Governance Boards commonly integrate processes for continual scheme improvement into the strategic business plans, and in partnership with the Managing Agency, establish measurable objectives including programs and initiatives to maintain and improve scheme performance (Section 15.5).

The Governance Board membership and the degree of independence is a key NZ CRS design element to provide not only independent (e.g., no conflict of interest) advice and guidance, but importantly, that the Governance Board represents and ensures the views of New Zealanders are captured, integrated

and reflected to improve the performance of the scheme to meet and exceed public expectations. Fundamentally, the mandate of the Governance Board will be to serve all New Zealanders and central Government by providing the strategic direction and to ensure the ultimate success of the scheme. Consequently, a NZ CRS Governance Board that is structured as distinctly separate from the function of the Managing Agency Executive Management Team, with the exception of the Managing Agency Chief Executive Officer, would provide a balanced, equitable stakeholder representation whilst ensuring the NZ CRS is consumer focussed and that the schemes strategic direction is underpinned by social, economic and environmental outcomes.

Based on the above research conclusions, Section 15.9 below provides a synthesis of this information in the form of the specific Governance Board components to be included in the NZ CRS design.

## 15.9 Summary of Design Feedback Received

The following table provides a high-level summary of the feedback received from the Scheme Design Working Group (SDWG) members after reviewing the section information. As many suggestions as possible have been incorporated but the NZ CRS Project Team acknowledge that the wide range of views expressed meant not every edit could be accepted. The NZ CRS Project Team is grateful for those who have provided feedback and where possible these have been used to provide further clarity and context throughout this section and to identify areas requiring further assessment during the NZ CRS implementation stage (Section 17).

<b>Scheme Governance Board Feedback – High-Level Summary</b>	
<b>Areas for further Investigation</b>	
Opportunities for resilience and pandemic response (see Section 17 for further discussion).	
<b>Support the Following</b>	
Views in favour of Queensland’s nine-member board for COEX, and support a board consisting of an independent chair, Central Government, LGNZ (not councils directly), and industry.	<b>Do not Support the Following</b>
Waste and resource recovery being a responsibility of Central Government, not local government.	Councils, MRFs, logistics companies and refund point operators being involved in governance due to conflicts of interest, and in the case of councils, lack of expertise.
<b>Additional Design Considerations</b>	
A “Reference Group” to include representatives from recyclers, LGNZ, Mana Whenua, Consumer NZ and community groups, to provide input into how the scheme is operating at the ground level.	

## 15.10 Component(s) to be Included in the New Zealand Container Return Scheme Design

The position on the Governance Board structural arrangement (e.g., integrated within the Managing Agency) and its legal status (e.g., not-for-profit, charity, private, trust) is yet to be determined subject to a review analysis currently underway by PwC, and which is supported by the findings of the research



collated and summarised to date. The reason for this is the Governance Board structural arrangement has a pivotal role in the ultimate success of the scheme by ensuring robust, independent and diverse strategic direction is provided to the Managing Agency to sustain scheme performance, motivate continual scheme improvements and ensure Managing Agency accountability against strategic objectives.

Regardless of the Governance Board structural arrangement and accounting for feedback from stakeholders involved in the NZ CRS design, the Project Team are of the view that a key function of the Governance Board will be to provide the strategic directives to the Managing Agency to support the schemes operation and goals as well as community and environmental based initiatives.

Notwithstanding the Governance Board structural arrangement, taking the key research findings into account, the Project Team are of the view that the following scheme Governance Board components will be included in the NZ CRS design:

- The Governance Board will comprise 9-government appointed members (including an Independent Board Chair and representation from, but not limited to, Iwi, recyclers, financial, regulatory, customer, retail, community, waste sector, local government, beverage, experienced strategists and other stakeholders as well as the Managing Agency Chief Executive Officer) and be aligned to the representation of the Te Tai Ōhanga – The Treasury Living Standards Framework (i.e., Natural Capital, Social Capital, Human Capital and Financial/Physical Capital), including upholding Te Tiriti o Waitangi – The Treaty of Waitangi.
  - The benefit to the NZ CRS of a 9-member Governance Board includes, but is not limited to, the ability for different industry groups to be represented. Notwithstanding the diverse make-up of the governance board, members are selected for the skills and experience and expertise they bring.
- The scheme Governance Board will be established separate from the scheme Managing Agency Executive Management Team and comprise skills, experience and expertise from, for example, Iwi, recyclers, financial, regulatory, customer, retail, community, waste sector, local government, beverage, experienced strategists and other stakeholders as well as the Managing Agency Chief Executive Officer to ensure that schemes strategic direction is underpinned by social, economic, cultural and environmental outcomes.
  - The benefit of this approach is that representatives of the scheme Governance Board will be independent of (i.e., have no affiliation with any member of, or organisation involved in the scheme Managing Agency Executive Management Team) the day-to-day operations of the scheme Managing Agency therefore enabling diversity in strategic scheme leadership and directives.
- The scheme Governance Board will provide strategic oversight and direction to the scheme Managing Agency Executive Management Team to support the development and continual improvement of the scheme while also being responsible for reporting to the respective government agency on scheme performance. Additionally, the scheme Governance Board is to monitor and oversee the commercial and operational risks of the NZ CRS (e.g., cashflow, fraud mitigation measures).
  - The benefit of this approach is that the scheme Governance Board has a pivotal role in the ultimate success of the NZ CRS and is consequently accountable to the Government. Additionally, this approach means the strategic oversight and direction provided by the independent scheme Governance Board is established by a diverse membership and experience base that has no affiliation with the scheme Managing Agency, only so far as the inclusion of the Managing Agency Chief Executive Officer.
- The roles and responsibilities, including tenure review periods of the scheme Governance Board will be set in the specific container return scheme legislative instruments (e.g., regulations).

- Setting the roles and responsibilities of the scheme Governance Board in the New Zealand Container Return Scheme regulations will provide transparency and accountability to those elected as members of the Governance Board. Ultimately, the scheme Governance Board is responsible for the ultimate success of the NZ CRS and so their specific roles and responsibilities need to be clearly established within the regulations.
- Clear processes will be established to manage all commercial information and/or data that is confidential and/or sensitive to competitors market activities.
  - Establishment of a clear process and or individual employee contracts specifically restricting the use of commercial and/or sensitive information and/or data will ensure scheme participants have confidence that commercially sensitive information will be used for scheme purposes only.
- Managing Agency Governance Board structure will consider conflicts of interest that may arise from entities/individuals that stand to profit/benefit from the operation of the scheme (i.e., entities/individuals are not independent).
  - The benefit of this approach to the NZ CRS is to ensure independence of Governance Board members. This is because of the potential threat that members could unduly influence (or be perceived to unduly influence) scheme outcomes in favour of themselves or the stakeholders they represent at the expense of others.
- Annual reviews of the scheme Governance Board by the respective central government department responsible for 'owning' the NZ CRS.
  - The benefit of this approach is to ensure the scheme Governance Board is held accountable to central government for the strategic performance of the scheme and the expectations/targets as set out within the NZ CRS legislative framework.
- Implementation of regulated scheme review periods comprising of two (2) initial scheme review periods to assess scheme performance and operation (e.g., eligible scheme container return rates, consumer accessibility) and strategic direction set at the end of the year-3 and year-5 financial periods, then every 5-years thereafter.
  - The benefit of two (2) interim scheme review periods is to enable sufficient time for the scheme to reach optimal performance and enable the scheme Governance Board to assess the schemes performance, including, for example, the interim annual container return rate targets and the accessibility of a consumer focussed network of container return facilities.

## SECTION 16: REPORTING

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## Section 16 Reporting

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Reporting is one of the most important measures for monitoring and ensuring the continuous success of container return schemes. The requirement for reporting of robust, accurate and consistent information in the NZ CRS design will be vitally important to identify where obligations are not being met by scheme participants and ensure correct refunds are calculated and issued.

Broadly, reporting provides the ability to undertake the below:

- Track scheme efficiency;
- Identify areas of improvement;
- Minimise fraud;
- End-to-end transactional/chain of custody data and reporting;
- Ensure participants are being compliant with their obligations;
- Ensure correct refunds are calculated and issued;
- Monitor accurate transfer of money as part of the financial flow of the scheme;
- Ensure scheme operational and financial transparency;
- Track operations against scheme quotas, targets and objectives; and
- Publish accurate public information such as container return rates.

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*Reporting is one of the most important measures for monitoring and ensuring the continuous success of the scheme. The requirement for reporting of robust, accurate and consistent information is vitally important to identify where obligations are not being met and ensure correct refunds are calculated and issued.*

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Through reporting, areas for improvement have been highlighted and consequently improved, including:

- The proportion of eligible containers returned relative to sale of equivalent containers;
- Rates of recycling of different containers;
- Reduction in types of litter; and
- Carbon emissions from transportation.

The ways in which reporting is undertaken varies across the different container return schemes. The sections below identify some of the tools and systems used, the reporting requirements for different parties, and the ways data is inspected in several existing schemes.

### 16.1 Reporting Systems

Reporting of clear scheme related information is important in the design of a NZ CRS to ensure operational and financial transparency and where appropriate, information is provided to relevant scheme participants, including consumers. Many of the global container return schemes employ a financial accounting and operational reporting system to manage scheme costs and performance to ensure transparency and auditable records to be maintained and assessed. A variety of reporting systems are utilised globally and to provide an insight into the reasoning behind and objectives for different reporting systems, examples are provided below for some of the different systems employed in Australia.

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*Reporting of clear scheme related information is important to ensure operational and financial transparency. Many global container return schemes employ a financial accounting and operational reporting system to manage scheme costs and performance to ensure transparency and auditable records to be maintained and assessed.*

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## 16.1.1 Australian Case Study

### 16.1.1.1 Provider Information

It was originally proposed in New South Wales that data would be collected on a regional basis. The basis behind this approach is that it can be used to allocate costs and allows beverage suppliers to be charged in proportion to their regional sales. This would result in a more refined cost allocation rather than using state-wide sales ratios. Calculation of regional return rates would also support in identifying underperforming regions or regions where fraud may be causing inflation of return rates<sup>1008</sup>. According to a discussion paper for the Western Australian scheme<sup>1009</sup>, it is also suggested that return rates would be measured for each class of container material on a regional basis. This approach is anticipated to help with publishing the relevant information for each region and developing a comprehensive understanding of the scheme's performance and targets, regional consumer behaviour, and areas for improvement.

At the start of the Northern Territory scheme in 2012, information from beverage producers was separated by brand. This was used to charge the supplier of each brand by the coordinators for their containers collected through the scheme. This method was complicated and expensive. Information for collected containers is instead now separated by material type and beverage producers are invoiced based on their territory-wide sales for each material type<sup>1010</sup>.

In relation to the submission of information, the New South Wales scheme uses an online supplier portal that is used by suppliers to report all required data, including yearly sales volumes<sup>1011</sup>. Other official documentation, such as the Exporter Annual Statutory Declaration, is also to be submitted on the portal. The link to the portal can be found on the scheme's official website<sup>1012</sup>.

### 16.1.1.2 Consumer Information

The first stage of container counting occurs once the consumer returns the empty eligible containers in order to claim the appropriate refund deposit amount. As previously stated in Section 13, electronic counting systems, through a combination of Reverse Vending Machines (RVMs) and barcodes, are effective in recording data for the purpose of fraud management. RVMs provide the ability to record information stored in barcodes allowing for efficient, detailed and transparent data to be collected. RVMs and barcodes also provide the ability to collate immediate information on the recovery rates of different materials based on the recording of the returned containers. This system is used in New South Wales, which works based on an electronic counting system only.

In addition to barcodes, Queensland uses scheme IDs as an additional tool for reporting. Scheme IDs are required by all consumers who participate in the scheme. Scheme IDs also allow charity groups to record their information and become virtual donation groups where consumers can donate their refunds to that charity group by allocating the money to the scheme ID of the charity group. The ability to identify individuals, charity groups and different communities through their scheme IDs allows Queensland to create detailed data and report on the positive social impacts of the scheme. New South Wales is limited in this regard and cannot report on consumer behaviour in as much detail as Queensland as they do not require individuals and community groups to register to receive their refunds.

<sup>1008</sup> Government of Western Australia, Department of Water and Environmental Regulation, 2017, Western Australia - Container Deposit Scheme, Discussion Paper

<sup>1009</sup> Government of Western Australia, Department of Water and Environmental Regulation, 2017, Western Australia - Container Deposit Scheme, Discussion Paper

<sup>1010</sup> Government of Western Australia, Department of Water and Environmental Regulation, 2017, Western Australia - Container Deposit Scheme, Discussion Paper

<sup>1011</sup> Exchange for Change, date unknown, True Up and Invoicing Frequently Asked Questions

<sup>1012</sup> <https://portal.returnandearn.org.au/cds/login.html>

### 16.1.1.3 Collection Point Information

In addition to recorded information for supplier and consumer activities, the requirement for collection points to maintain records of eligible containers counted, refunds issued and/or undertake regular audits of collected materials is important to ensure that the system is operating correctly. The ability of a facility to undertake automated actual counts is influenced by the container count method (e.g., barcode scanning, shape verification) which in turn influences the form eligible containers are received (e.g., 'whole' containers with scheme ID intact [e.g., barcode, logo]). Therefore, the matter of counting eligible containers is an important design element and one which has considerable influence in ensuring accurate recording and reporting of data in order to undertake accurate transfer of monies and track scheme efficiency.

When containers are returned by consumers, collection facilities receive the scheme material and are responsible for ensuring that accurate records of eligible containers are kept in order to verify the number of containers returned at any point in time. This is particularly the case in South Australia where collection points are reimbursed primarily on a weight-based system and so accurate records are needed to ensure weight-based calculations are in-line with the number of containers collected. Other schemes employ an additional count verification process at facilities whereby containers are re-counted and then immediately sorted into material type based on commodity markets (e.g., clear PET, aluminium, LPB).

In New South Wales, collection depot operators who collect containers over a certain limit are required to enter into a leasing agreement with the Network Operator and use the electronic counting technology provided by TOMRA. This requirement allows for the same level of transparency to be upheld as with the use of RVMs, and minimises any human errors created from manual handling of large quantities of returned containers. Additionally, the use of the technology of the same operator as the RVMs allows for the information and recording systems to be consistent across all collection points.

According to the scheme regulatory, New South Wales Environment Protection Agency, the recording and reporting systems of the Network Operator was one of their main attractions during the tendering process for the role of Network Operator. The ability for the New South Wales Environment Protection Agency to request immediate information on any collection point location meant that the New South Wales Environment Protection Agency was provided with greater transparency over the operations and could undertake their role of scheme governance more efficiently. This system of electronic reporting has allowed the New South Wales Environment Protection Agency to make improvements throughout the scheme's operation, such as the relocation of RVMs that were identified to be underperforming<sup>1013</sup>.

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*Surveys have been used during the scheme design, before the implementation stage, to learn about the needs of different stakeholders, and during the operational stage, to follow up and learn about the experiences of the stakeholders and where changes need to be made.*

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## 16.2 Participant Surveys

Participant surveys have been extensively used as a research method, in order to create well-designed schemes that are based on informed decisions and the needs and experiences of different scheme stakeholders. Surveys have been used during the design stage, before the implementation stage, to learn about the needs of different stakeholders, and during the operational stage, to follow up and learn about the experiences of the stakeholders and where changes need to be made. Participant surveys have helped in understanding a range of topics including:

- Employment impacts;
- Convenience and access of collection point locations and systems;
- Experience of required obligations;

<sup>1013</sup> Direct communication with New South Wales EPA representatives, December 2019.

- The market share of different beverages and material types; and
- Stakeholder experiences.

The incorporation of surveys in the NZ CRS will help the Managing Agency and scheme Governance Board to understand stakeholder views (dependent on the surveys focus) and to ensure that any scheme decisions (e.g., marketing and communications) are informed by and acknowledge the views of scheme participants and consumers. The benefit of this approach is to ensure the NZ CRS serves all New Zealanders by delivering a successful and continually improving service to consumers.

Examples are provided below to give an insight into situations where participant surveys have been used and how the results have helped inform the design of a scheme.

### 16.2.1 Container Return Scheme Implementation Design Stage

During the design stage, surveys have been used to understand if the community supports the proposed scheme and the community's general perception of container return schemes.

As part of the two (2) schemes that are yet to come, the scheme design groups surveyed the local communities for both the Scottish and the Western Australian scheme. The Scottish survey was able to find that, of the information presented by Zero Waste Scotland, 77% of the Scottish people were in favour of a deposit return scheme<sup>1014</sup>. Similarly, the survey for Western Australia was able to determine that public support was high for a new scheme. According to the State Government, more than 3,000 people responded to the public consultation process. The following questions were asked of the survey participants<sup>1015</sup>:

1. Do you support the implementation of a container deposit scheme for Western Australia?
2. What do you think the most important benefit of a container deposit scheme will be to Western Australia?
3. Where do you think you would most likely go to recycle your eligible containers?
4. How would you like to receive your refunds for containers?
5. Are there any other refund payment methods you would like to use?
6. How far do you normally travel for shopping, sporting or other regular activities?
7. What is your postcode?

Of the respondents, 97% were in support of the new scheme and highlighted the following three (3) benefits anticipated from the scheme:

- Protection of the environment;
- Reduction in litter; and
- Increase in recycling.

The government stated that the feedback from this process was going to be used to shape design decisions. Additionally, the survey was able to understand specific needs from the perspective of the retail and beverage industry. Beverage producers and retailers identified that they need to have time to plan and implement the required logistical changes and asked that the scheme should not commence during the peak retail seasons of December and January<sup>1016</sup>.

<sup>1014</sup> <https://depositreturnscheme.zerowastescotland.org.uk/>

<sup>1015</sup> Government of Western Australia, Department of Water and Environmental Regulation, 2017, Western Australia - Container Deposit Scheme, Discussion Paper

<sup>1016</sup> Hon Stephen Dawson MLC (Government of Western Australia), 2017, Western Australians behind container deposit scheme, available from: <https://www.mediastatements.wa.gov.au/Pages/McGowan/2017/12/Western-Australians-behind-container-deposit-scheme.aspx>



Similarly, in Queensland, before the implementation of the scheme, the Managing Agency undertook consumer research to test how different campaign themes would be received and what would be most effective. Looking at the research outcomes and at behavioural economics, it was found that the largest campaign motivator was loss aversion. The Managing Agency was able to use this research to create media content that would encourage consumer participation in the scheme.

In Copenhagen, participants surveys were used to form conclusions in trials that were attempted to improve efficiencies for the existing scheme. In 2015, the city of Copenhagen introduced shelves on public bins to allow residents that did not want to collect and return their containers to store their containers on the shelves to be picked up later by others. The trial proved successful and 95% of residents who were surveyed said that they were in support of the implementation of the deposit shelves<sup>1017</sup>. In addition to the reduction of unredeemed containers, the consumer experience led the city of Copenhagen to implement the deposit shelves.

## 16.2.2 Operational Stage

During the operational stage of the scheme, surveys are used as a mechanism to record and manage faults in the existing system and provide the informed basis for required changes. Understanding the experiences of the participants is important in order to fix problems where they may occur, ensure continuous satisfaction of participants, and guarantee the continuous success of the scheme.

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*Surveys are used as a mechanism to record and manage faults in the existing system and provide the informed basis for required changes. Understanding the experiences of scheme participants is important in order to fix problems where they may occur, ensure continuous satisfaction of participants, and guarantee the continuous success of the scheme.*

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In the Northern Territory, where the container return rate is approximately 48%, a survey of the users and operators of the scheme was able to identify that one of the main operational problems was the inconvenient distance and the location of scheme services. During a survey, consumers stated that they experienced a lack of access to collection facilities in remote communities. 20% of the survey respondents noted it was too far to travel to the nearest collection facility and that weekend opening times were not convenient. This adversely impacted the likelihood of consumers returning eligible containers<sup>1018</sup>. Similarly, 67% of scheme operators reported that high costs were associated with transportation. Through the survey, respondents informed the authorities that coordinated efforts between depot operators, transport companies and community members were being implemented to reduce these costs by providing back-loading of trucks and barges to return eligible containers from remote Northern Territory communities<sup>1019</sup>. Hence, the survey was able to aid the authorities in identifying that, if improvements were made to the locations and operations of collection facilities, specifically in remote locations, the container return rate would likely be increased, and transportation costs would be decreased.

Participants surveys are also beneficial as they provide a tool for responding to concerns by providing proven experience of other participants. This is relevant to retailers, where participants surveys have shown how retailer participation can lead to improved foot traffic and retail sales.

In Sweden, a survey of RVM users in Sweden found that 93% shopped at the store when they recycled and 44% did their full shopping trip for the week<sup>1020</sup>. Similarly, a 2013 survey in New York undertaken on 1,100 people, found that 68% of those surveyed did their shopping when they were returning their containers and 81% became return customers at the stores where they had returned their containers.

<sup>1017</sup> Container Deposit Systems, 2019, Container Deposit Schemes an essential lifeline for homeless, available from: <https://www.containerdepositsystems.com.au/articles/container-deposit-schemes-an-essential-lifeline-for-homeless>

<sup>1018</sup> [https://ntepa.nt.gov.au/\\_data/assets/pdf\\_file/0011/590798/cds\\_review\\_report\\_ernst\\_young.pdf](https://ntepa.nt.gov.au/_data/assets/pdf_file/0011/590798/cds_review_report_ernst_young.pdf)

<sup>1019</sup> Evaluation of the Operation of the Northern Territory Container Deposit Scheme, 2018

<sup>1020</sup> <https://www.environmental-expert.com/articles/the-return-to-retail-collection-model-for-container-deposit-schemes-case-study-798020>

57% of those surveyed chose to undertake their shopping at particular stores because of the store's convenient beverage collection system<sup>1021</sup>.

A survey of retailers in the United States of America was able to calculate what the major logistical costs of schemes are on retailers. In Vermont, a 2006 study surveyed seven large food retailers who operated 55 stores. Based on the survey, the different handling costs for the use of the RVMs and for manual counting were identified. More information on this can be found in Section 5. This survey was able to benefit retailers and scheme organisers by understanding how to support retailers in reducing their costs from scheme participation<sup>1022</sup>.

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*If a revision of a scheme is to be undertaken, participants surveys provide an opportunity to ensure that all consumer concerns are addressed in the revision, and to gain valuable information from the many years of experience.*

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Participant surveys are also a beneficial tool for tracking the performance of the scheme against the targets that have been allocated. A survey of the population of British Columbia in Canada was able to find that in 2018, 98.6% of the population had access to a contained collection facility, which was higher than the target identified in the scheme's Stewardship Plan of 97%. Similarly, an online survey undertaken in September 2018, was able to find that the scheme had achieved an awareness level of 98% for the container types that can be returned to depots for a refund, compared to the 95% goal that was set out by the Managing Agency<sup>1023</sup>.

### 16.2.3 Revision Stage

If a revision of a scheme is to be undertaken, participants surveys are a great opportunity to ensure that all consumer concerns are addressed in the revision, and to gain valuable information from the many years of experience. Moreover, surveys are able to understand if the public is in favour of the revision. In Vermont, a survey was able to understand that 93% of surveyed citizens were in support of the existing scheme, and 80% were in favour of the scope of eligible containers to be expanded<sup>1024</sup>.

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*Diversion calculations are important in determining the resource recovery rates and to assess the performance of the scheme against scheme targets.*

The South Australian Government is currently progressing through a review process and has consulted the general public<sup>1025</sup> and industry stakeholders<sup>1026</sup> for their perspective on the revision. The consultation indicated 84% community support for the inclusion of more containers in the scheme, followed by 96% of the community not supporting the removal of any items from the current scheme<sup>1027</sup>. Industry feedback was also able to provide information on which items were desired to be excluded from the scheme. More information on the results of the consultation process is available in Section 4 of Tranche 2. The survey was

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*In order to calculate the rate of diversion from the scheme, robust collection and recording systems of data are required.*

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<sup>1021</sup> CM Consulting, 2018, In Our Opinion: Why Deposits Make Sense for Retailers, available from: <https://www.cmconsultinginc.com/2018/09/in-our-opinion-why-deposits-make-sense-for-retailers/>

<sup>1022</sup> DSM Environmental Services, Inc., 2007, The Costs of Beverage Container Redemption in Vermont

<sup>1023</sup> Encorp Pacific (Canada), 2018, 2018 Annual Report, available from: <https://www.return-it.ca/ar2018/pdf/AnnualReport.pdf>

<sup>1024</sup> Minnesota Pollution Control Agency, 2014, Increasing recycling of beverage containers in Minnesota: Recommendations for a statewide recycling refund program.

<sup>1025</sup> General public comprised, 42 comments received via the South Australian Governments YourSAY community consultation website, 1001 respondents via an online questionnaire (general public), 16 emails and posted letters to the EPA and Members of Parliament and 28 comments received via social media.

<sup>1026</sup> Industry stakeholders comprised, 7 Container Deposit Operator, 17 beverage production/sales organisations, 29 wine industry members, 15 industry organisations, 3 environment and community groups, 9 local government organisations, 3 Members of Parliament and the Legislative Council.

<sup>1027</sup> Improving South Australia's Recycling Makes Cents Scoping Paper – Consultation Summary Report May 2019

able to inform the State Government of some of the modifications<sup>1028</sup> needed for the revision, as suggested by survey participants, such as banning the sale of non-recyclable items and the implementation of fines and incentives to increase compliance.

### 16.3 Diversion Calculations

The resource recovery rates of most schemes are publicly reported and can be found through simple online research providing consumers and scheme participants with information on scheme performance. The resource recovery rates that have been found for the existing schemes can be found in Table 8. Diversion calculations are important in determining the resource recovery rates and to assess the performance of the scheme against the recovery rates that were set as targets. Additionally, diversion calculations aid in understanding which types of schemes are the most effective. This is discussed in Table 8, where the return-to-retail models and depot models applied in different countries are compared against the reported return rates.

In order to calculate the rate of diversion from the scheme, robust collection and recording systems of data are required. The reporting requirements from the different participants of existing schemes are identified in Section 16.4 and support the calculations needed to establish resource recovery rates. As an example, in Denmark, the law states that producers are required to report to the Managing Agency the total number of items marketed in the past calendar year, so that the Managing Agency can calculate the total return rate of refillables in the past year<sup>1029</sup>. Similarly, the sales volumes that are required to be submitted annually on the supplier portal of the New South Wales scheme aid in calculating the container return rates of that year.

Additionally, as previously mentioned, the matter of counting eligible containers has considerable influence in ensuring accurate recording and reporting of data and the ability to accurately track container return rates. Therefore, taking this information into consideration, the NZ CRS will benefit from the establishment of, for example, scheme targets including methane emission reduction as well as container return rate targets which have been proposed at a minimum eligible container return rate of 85% and an aspirational eligible container return rate of 95% (see Section 11 for further information). Establishing targets for a minimum and an aspirational eligible container return rate means the scheme Managing Agency and scheme Governance Board have set targets against which performance of the scheme can be measured and against which both Management and Governance can be held to account. To support this will be the requirement for all scheme participants to provide accurate, robust and transparent data and information to the Managing Agency (as per the scheme requirements) which will support the accurate calculation of scheme return rate efficiency.

In British Columbia's 2018 Annual Report<sup>1030</sup>, the Managing Agency states that recovery rates are calculated by dividing the total units of containers collected by the total units sold. This is measured as a percentage rounded to the first decimal point. The units sold are reported by the producers to the Managing Agency. The units collected are counted and collected by the Managing Agency. In relation to calculations for the weight of collected materials, the report states that the weight of collected material is derived from the weight invoiced by processors for the units processed by material type. Once both the recovery rates of units and weight are calculated, the Managing Agency undertakes an annual comparison of the past three years, based on the weight of units processed by commodity types. The result of the total weight recycled per year is compared to the total weight of material collected to assess the reasonableness of the total recycled weight published in the annual report. A significant variation between the weight processed year on year compared to units collected is investigated.

<sup>1028</sup> Improving South Australia's Recycling Makes Cents Scoping Paper – Consultation Summary Report May 2019

<sup>1029</sup> GlobalDenmark Translation, 2017, Statutory Order on Deposits on and the Collection etc. of Packaging for Certain Packages.

<sup>1030</sup> Encorp Pacific (Canada), 2018, 2018 Annual Report, available from: <https://www.return-it.ca/ar2018/pdf/AnnualReport.pdf>

The New South Wales Environment Protection Agency stated that in addition to the performance of the current scheme, diversion calculations were able to provide insightful information on the previous performance of New South Wales' recycling sector. Prior to the implementation of the scheme, the State Government did not undertake frequent detailed surveys, but it was assumed that the resource recovery rate in the state was 60%. After the implementation of the scheme, the surveys and diversion calculations undertaken showed that the resource recovery rate of the state was in fact 33%<sup>1031</sup>.

For the first three (3) months of operation of the New South Wales scheme, resource recovery rates needed to be assumed in order to calculate the upfront supplier invoices. These were adjusted at a later period based on the actual resource recovery rates that were calculated once the scheme was operational. The assumed diversion rates helped with calculating the total scheme costs by material type, by allocating to each material type, the refund amount, the application network fees, as well as a proportion of the fixed administrative and compliance costs based on volume. The assumptions that were applied include the below:

- Assumed resource recovery rates applied against an estimate of total containers supplied in that month.
- Estimated total number of eligible containers supplied in New South Wales per annum of 3.5 billion, and an assumed seasonal factor.
- Assumed reducing recovery rates of 100% in December 2017, 90% in January 2018 and 80% in February 2018.
- Assumption that 50% of containers are recovered through Material Recovery Facilities and kerbside collection.
- Application of the current South Australian recovery rates by material type<sup>1032</sup>.

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*In most situations, beverage and/or container producers are required to provide monthly sales data in order to support the Managing Agency in managing scheme performance.*

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In Michigan, container return rates are not collected as part of the scheme<sup>1033</sup>, and hence the State Government has stated that the existing level of fraud prevalent in the scheme is unknown.

## 16.4 Reporting Requirements

Reporting requirements tend to be detailed and often outlined in the regulations of the schemes, including for example those as specified in the Western Australian container return scheme (e.g., information to be published on the scheme website, inform the Minister about any matter that may prevent the objectives in the scheme business plan or performance target, provision of scheme quarterly and annual report to the Minister)<sup>1034</sup>. The reporting requirements for the different participants of the scheme have been discussed in previous sections where the roles and responsibilities of the different participants have been discussed.

As discussed above, the NZ CRS design will be supported by extensive reporting requirements for all scheme participants for a variety of reasons including fraud management, scheme transparency and assessment of the performance of the scheme. The information below provides some further detail on the reporting that is required of the different participants of the existing schemes.

### 16.4.1 Consumers

For consumers, reporting requirements are minimal. One reason consumers may be required to report information is for the purpose of fraud minimisation where consumers are redeeming a large quantity of

<sup>1031</sup> Direct communication with New South Wales EPA representatives, December 2019.

<sup>1032</sup> Exchange for Change, 2017, Return and Earn Publishes Estimated Costs for Beverage Suppliers in NSW

<sup>1033</sup> Department of Natural Resources and Environment, 2010, Michigan Bottle Deposit Law Frequently Asked Questions, available from [https://www.michigan.gov/documents/deq/dnre-whmd-sw-mibottledepositlawFAQ\\_318289\\_7.pdf](https://www.michigan.gov/documents/deq/dnre-whmd-sw-mibottledepositlawFAQ_318289_7.pdf)

<sup>1034</sup> Waste Avoidance and Resource Recovery Amendment (Container Deposit) Act 2019. Western Australia

containers. Written container declarations are often required to be completed by customers that are redeeming containers over a specified limit. Examples where this is required has been discussed in Section 13 with South Australia and Maine being provided as an example.

## 16.4.2 Retailers

If retailers employ Reverse Vending Machines (RVMs), the collection of data and reporting requirements is undertaken automatically through the electronic systems imbedded in RVMs.

If containers are accepted and refunded manually, retailers are usually required to collect manual information on the empty containers that they collect and refund, and the accounting, drop offs and collections that they may undertake. Retail staff are often required to be well trained in the reporting requirements that retailers are required to undertake.

## 16.4.3 Beverage Producer and Container Manufacturers

Information on reporting requirements for beverage producers and container manufacturers is extensive and can be found in detail in the regulations of most schemes. In most situations, beverage producer and/or container manufacturer are required to provide monthly sales data in order to support the Managing Agency with achieving the below:

- Tracking scheme costs and sending out the relevant invoices;
- Tracking scheme containers placed on to the market and the eligible containers returned;
- Having complete transparency and visibility on the performance of the scheme;
- Identifying areas of improvement; and
- Ensuring that producers are undertaking their legal obligations.

The below information highlights some of the reporting requirements of producers in existing schemes:

- New South Wales: Producers are required to submit the volume of their sales annually on the online portal. Before being able to participate, producers must make sure that the details of their container approvals are recorded correctly in the 'NSW CDS Container Approval Portal'. For exported containers, exporters who wish to apply for a rebate must provide information on the volume of containers first supplied and the volume exported. Exports are subtracted from the first supplier's sales volume<sup>1035</sup>. First suppliers provide monthly reporting of total amount of containers supplied during the previous month and provide an annual Statutory Declaration at the end of each financial year<sup>1036</sup>.
- Oregon: Distributors are required to report the beverage sales for the prior calendar year to the Oregon Beverage Recycling Cooperative (OBRC) no later than April 1 of each year. OBRC will compile the information and submit it to the Oregon Liquor Control Commission no later than 1 July of each year<sup>1037</sup>.
- New York: Reporting is required every quarter for the deposits collected and the unredeemed deposits<sup>1038</sup>.
- Vermont: Reporting is required every quarter. The information is submitted to the Vermont Department of Taxes<sup>1039</sup>.

<sup>1035</sup> Exchange for Change, 2017, Newsletter November 2017.

<sup>1036</sup> <https://www.exchangeforchange.com.au/suppliers/supplier-obligations.html>

<sup>1037</sup> Oregon Liquor Control Commission, 2020, Oregon's Bottle Bill, Frequently Asked Questions, available from: [https://www.oregon.gov/olcc/docs/bottle\\_bill/bottle\\_bill\\_faqs.pdf](https://www.oregon.gov/olcc/docs/bottle_bill/bottle_bill_faqs.pdf)

<sup>1038</sup> BottleBill.org, 2018, New York, available from: <http://www.bottlebill.org/index.php/current-and-proposed-laws/usa/new-york>

<sup>1039</sup> Vermont Agency of Natural Resources - Waste Management & Prevention Division Solid Waste Program, 2019, Bottle Bill Fact Sheet: Manufacturers

- Massachusetts: Reporting is required to be undertaken monthly by beverage producers and includes information on the deposits and refunds of that previous month.
- Maine: The law was updated in 2019 to require deposit initiators to report on the number of beverage containers collected in the previous year<sup>1040</sup>.
- Connecticut: Deposit initiators are required to submit a quarterly report for the preceding calendar quarter to the Department of Revenue Services. Reports are required to be filed electronically by the last day of the month after the quarter closes. Deposit initiators are required to document the refund value deposited into the special account (the bank account dedicated to their financial flows from the scheme) and the refund values withdrawn from the account. Quarterly reports are to include:
  - the special account balance at the beginning of the quarter;
  - the deposits credited and refund values paid during the last quarter;
  - the interest, dividends and returns received during the last quarter;
  - the withdrawals, service charges and overdraft charges; and
  - the balance at the close of the quarter<sup>1041</sup>.
- Denmark: Producers are required to report their sales data every four weeks to an independent accounting firm. Summary reports are sent to the Managing Agency. From the summary reports, the Managing Agency invoices the producers. The Managing Agency receives only summary reports as the Managing Agency has representatives from major beverage producers and smaller producers were concerned that large producers may see and use their sales data. Each following payment period, the real data is checked against the estimated data and the deposit charges are corrected.
- Estonia: Producers are required to submit reports about their sales and recovery rates. The data is kept in a national database called the packaging register<sup>1042</sup>.
- Michigan: Information is collected by the Michigan Department of Treasury in relation to the economic amount of deposits collected and returned<sup>1043</sup>. Return rates of containers are not collected as part of the scheme.

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*As part of the contractual obligations, container return schemes often require transparent and auditable records to be maintained and assessed. The auditing of reported information is vital in ensuring that the Managing Agency is provided with clear and transparent information on scheme performance and financials.*

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#### 16.4.4 Container Return Facility Operators

Reporting requirements for collection point operators are dependent on whether operators use manual or automatic counting systems.

Where manual counting is undertaken, operators are required to have accurate manual counting and recording processes. Where automatic counting systems are used such as RVMs, data collection and storage is automatically undertaken by the machine. Operators are only required to submit the information saved by the machine by the deadlines required by the Managing Agency.

<sup>1040</sup> BottleBill.org, 2018, Maine, available from: <http://www.bottlebill.org/index.php/current-and-proposed->

<sup>1041</sup> Connecticut State, Department of Energy and Environmental Protection, 2020, Bottle Bill FAQ, available from: <https://portal.ct.gov/DEEP/Reduce-Reuse-Recycle/Bottles/Bottle-Bill-FAQ>

<sup>1042</sup> BottleBill.org, 2001, Estonia, available from: <http://www.bottlebill.org/index.php/current-and-proposedlaws/worldwide/estonia>

<sup>1043</sup> Department of Natural Resources and Environment, 2010, Michigan Bottle Deposit Law Frequently Asked Questions, available from [https://www.michigan.gov/documents/deq/dnre-whmd-sw-mibottledepositlawFAQ\\_318289\\_7.pdf](https://www.michigan.gov/documents/deq/dnre-whmd-sw-mibottledepositlawFAQ_318289_7.pdf)

### 16.4.5 Material Processing Facility Operators

The receipt, processing, counting, weighing, storage and electronic delivery of data from a Material Consolidation Facility (MCF) and Material Recovery Facility (MRF) processing scheme material is required to be recorded so that the throughput of this material through the facilities can always be tracked and audited. Additionally, facilities that process both scheme material and other materials are generally required to keep both material sources separate so as to accurately track eligible scheme containers and minimise potentially fraudulent activities (e.g., counting and refunding ineligible containers).

In New South Wales, for an MRF to claim a quarterly refund, each operator must measure and report the total materials received. The measurement, calculations processes and protocols for the quantity and source materials received at the facility have been discussed in detail in Section 7. For the Scheme Coordinator to process payments quickly and efficiently, MRFs are required to report on specific information to ensure the refund application is for eligible containers that have been processed for reuse or recycling by the MRF operator<sup>1044</sup>.

If a MRF operator is using a weights-based system, the MRF operator must report to the Scheme Coordinator 14-days after the end of each month the following information, in order to be eligible for a refund:

- The total measured weight of each relevant output material type (excluding any scheme material) delivered from the MRF for reuse and recycling; and
- The total measured weight of scheme material delivered from the MRF by output material type.

If an MRF operator is using a direct count-based system, the MRF operator must report to the Scheme Coordinator 14-days after the end of each month the following information, in order to be eligible for a refund:

- The number of eligible containers (excluding any scheme material) delivered from the MRF for reuse and recycling, by output material type; and
- The number of eligible containers that are scheme material delivered from the MRF by output material type.

## 16.5 Audit Processes

As part of the contractual obligations, container return schemes often require transparent and auditable records to be maintained and assessed. The auditing of reported information is vital in ensuring that the NZ CRS Managing Agency is provided with clear and transparent information on scheme performance and financials. Audit processes are discussed in detail in Section 13, as the processes and requirements for auditing are most often outlined in the regulations of the scheme. For the purposes of reporting, some examples are discussed below.

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*The receipt, processing, counting, weighing, storage and delivery of data from a Material Consolidation Facility (MCF) and Material Recovery Facility (MRF) processing scheme material is required to be recorded so that the throughput of this material through the facilities can always be tracked and audited.*

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### 16.5.1 Auditing of Producers

In most existing schemes, the sales data and financial information of producers, such as records of deposits and refunds, are audited by the Managing Agency. The auditing of producers helps guarantee that accurate financial transparency is provided to relevant scheme participants, and that fraud is not undertaken by producers.

<sup>1044</sup> Environmental Resources Management, 2008, Review of Packaging Deposits System for the UK.

Producers of eligible containers in New South Wales are required to make sure that the details of their container approvals are recorded correctly in the 'NSW CDS Container Approval Portal'. The scheme regulator had the authority to undertake compliance measures, such as auditing of records, to ensure that all registered containers meet the regulations. In Connecticut, by law, the state has the right to examine accounts and records of deposit initiators. If non-compliances are found, the scheme regulator is able to file complaints with the attorney general to institute action. The law applies provisions to inspect records, deficiency assessments, penalties, and refunds<sup>1045</sup>.

In relation to exported containers, suppliers who wished to apply for a rebate in New South Wales could have their export claims audited by the Managing Agency to verify that the information provided is correct. Suppliers who apply for a rebate are required to provide information on the volume of containers first supplied and the volume exported. If misleading information is provided, the Scheme Coordinator has the right to prohibit the supplier from making future export claims in respect to that particular distributor<sup>1046</sup>. In Queensland, an exporter of eligible containers must have an Export Refund Claim Agreement with the Managing Agency. This allows the Scheme Coordinator to audit and verify the claims<sup>1047</sup>.

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*Public reporting of key scheme operational performance data by the Managing Agency provides greater clarity and transparency on the efficiency of the scheme and increases the community's trust in the scheme and willingness to participate.*

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## 16.5.2 Auditing of Facilities

In order to support the successful operation of the scheme, Material Processing Facilities (e.g., MCF, MRF) are required to undertake detailed data reporting that depends on the assessment method selected as per the legislation, to retain transparent data records and ensure compliance with all scheme Managing Agency requirements. In addition, Material Processing Facilities (e.g., MCF, MRF) are most often required to undertake internal and independent auditing as and when required by the scheme Managing Agency and/or the respective government.

In New South Wales, MRF operators (refer Section 7 for further information) are required to undertake monthly recounts of a proportion of containers in accordance with the New South Wales Environment Protection Agency Sampling Plan<sup>1048</sup>, with documented evidence of all recounts maintained for auditing purposes. Alongside requirements for approval, MRFs must also carry out verification audits of container samples to provide the Scheme Coordinator with assurance that approved sampling protocols are adhered to and processing refund claims are accurate. The Scheme Coordinator may also at times, in addition to verification activities, appoint an appropriately qualified independent assurance team to carry out an assurance audit of the MRF's operations compliance with one or more aspects of the Protocol. The Environment Protection Authority, the scheme regulator, may also carry out an audit or inspection of the MRF at any time to determine compliance. Further detailed information on the auditing of MRFs in New South Wales is provided in Section 7.

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*In order to support the successful operation of the scheme, MRFs are required to undertake detailed data reporting that depends on the assessment method selected as per the legislation, to retain transparent data records and ensure compliance with all scheme coordinator and/or Managing Agency requirements.*

*In addition, MRFs are most often required to undertake internal and independent auditing as and when required by the scheme coordinator, Managing Agency and/or the respective government.*

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In Denmark, to ensure quality of material is maintained in accordance with relevant regulations and requirements of the scheme, the Managing Agency carries out regular inspections of the approved container re-

<sup>1045</sup> Connecticut State, Department of Energy and Environmental Protection, 2020, Bottle Bill FAQ, available from: <https://portal.ct.gov/DEEP/Reduce-Reuse-Recycle/Bottles/Bottle-Bill-FAQ>

<sup>1046</sup> Exchange for Change, 2017, Newsletter November 2017.

<sup>1047</sup> Container Exchange, date unknown, Beverage manufacturers, available from: <https://www.containerexchange.com.au/industry-partners/>

<sup>1048</sup> Material Recovery Facility Processing Refund Protocol: Sampling Strategy, November 2017



processors ensuring that minimal material collected through the scheme is wasted<sup>1049</sup>. The strict process assurance methods implemented by the Managing Agency ensure strict compliance with the scheme requirements and that the scheme delivers on the primary purpose to recycle as many empty bottles and cans as possible into new bottles and cans.

### 16.5.3 Auditing of the Scheme Managing Agency

To ensure equality between all scheme participants, the operations of the Managing Agency can also be audited. This is not only undertaken for transparency, but also to improve the operations of the scheme. For Queensland's scheme, an internal audit of the processes implemented by the Managing Agency was undertaken by a third-party, KPMG. KPMG audited processes such as the inspection and follow up process of collection facilities, and the complaints handling process. Where issues were identified, the Managing Agency reviewed their policies and systems to improve their procedures with operators and customers<sup>1050</sup>.

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*In most existing schemes, the sales data and financial information of producers, such as records of deposits and refunds, are audited by the Managing Agency. The auditing of producers helps guarantee that accurate financial transparency is provided to relevant scheme participants, and that fraud is not undertaken by producers.*

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Under the New South Wales container return scheme, the Scheme Coordinator Exchange for Change has full financial responsibility with all funds accounted for, reconciled and reported on annually to the government and tabled in parliament. To ensure transparent financial management, independent audits are carried out by the scheme regulator, the New South Wales Environmental Protection Authority, across multiple scheme elements<sup>1051</sup>.

### 16.5.4 Auditing of Eligible Scheme Materials

In addition to being used as a compliance tool, auditing can also be used to help form conclusions for reporting purposes as well. For example, in British Columbia, waste audits were undertaken to measure the effectiveness of a trial of a recycling programme for the collection of container beverages. The province conducted waste audits before and after the implementation of the trial and found that the number of beverage containers disposed in the bins had decreased by 27%<sup>1052</sup>.

## 16.6 Communication of Reporting

Public reporting of key performance data by the agency responsible for scheme operations and performance provides greater clarity and transparency on the efficiency of the scheme and increases the community's trust in the scheme and willingness to participate. Reporting of key performance data through mechanisms such as scheme annual reports, scheme website information, social media platforms and community notices, will be vital in the design and implementation of a NZ CRS to ensure the scheme serves all New Zealanders by delivering a successful and continually improving service to consumers.

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*To ensure equality between all scheme participants, the operations of the Managing Agency can also be audited. This is not only undertaken for transparency, but also to improve the operations of the scheme.*

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The type of information available publicly to consumers, in relation to the finances of schemes, varies depending on the operations and decisions made by managing agencies and operators. Section 6.3 lists a range of public information that is published to consumers as part of different global schemes. Examples includes published annual financial statements, as is undertaken in Norway, and detailed

<sup>1049</sup> The Dansk ReturSystem was established in 2000 as a limited-liability company with four owners. The Statutory Order on Deposits specified that the company should be non-profit ensuring that the only purpose of the deposit and return system is to recycle as many empty bottles and cans as possible into new bottles and cans.

<sup>1050</sup> Container Exchange, 2019, COEX Container Exchange Annual Report 2018-2019

<sup>1051</sup> <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/return-and-earn/how-return-and-earn-works/scheme-financial-structure>

<sup>1052</sup> CM Consulting, 2018, Who Pays What? An Analysis of Beverage Container Collection and Costs in Canada

annual reports as is undertaken in Queensland and British Columbia. In British Columbia's annual reports, the annual recovery rate of the containers collected is reported in a number of ways, including the recovery rate by count of container, by weight and by regional per capita return<sup>1053</sup>.

In addition to communication of information to the public, the Managing Agency often publishes public information for producers and scheme operators. In New South Wales, the Managing Agency regularly publishes online articles relevant to producers and sends letters to answer common queries. For example, a letter published online from the Managing Agency to producers explains the process of calculating each supplier's invoices<sup>1054</sup>. The Managing Agency also publishes monthly pricing and invoicing newsletters that provide a summary of last month's operations and financial flows and sends an email to suppliers showing a detailed explanation of the producer's invoice<sup>1055</sup>.

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*The responsibility of scheme participants is to perform their contractual obligations and report on the data, in the required format and timeframe, as is agreed to in their contractual agreement and in accordance with the scheme regulations.*

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In most schemes, Managing Agencies and/or Scheme Coordinators have created dedicated online pages with helpful resources and contact information targeted to scheme participants. The State Department in California has developed an online page that provides useful resources that are beneficial to retailers<sup>1056</sup>. The online page directs retailers to the sections in the regulation that applies to them, to a map that shows retailers where the nearest collection and refund point is and if an RVM is available at that collection point, and to several relevant forms and documents. Retailers in New South Wales are provided an online factsheet provided by the New South Wales Environment Protection Authority website that outlines the responsibilities of all retailers in New South Wales<sup>1057</sup>.

In a review of the New South Wales container deposit scheme, undertaken in 2018 by the Independent Pricing and Regulatory Tribunal (IPART), it was reported that there was a need for greater transparency and reporting of the Network Operator's performance and prices but that this decision should be considered by the scheme regulator, the Environment Protection Authority. This was further supported by Coca Cola Amatil and the Australian Beverages Council feedback seeking greater transparency on the fees paid to the Network Operator and to ensure that the Network Operator revenue reflected incurred costs<sup>1058</sup>. The review also recommended a series of additional measures to improve transparency of scheme financials and contractual arrangements, including:

- The Scheme Coordinator (Exchange for Change) publish its price per container by material type and the associated assumptions in the month prior to costs taking effect.
- The Scheme Regulator (New South Wales Environment Protection Authority) publish a summary (e.g., roles and responsibilities and number of collection points within each geographical area) of contractual agreements with the Scheme Coordinator (Exchange for Change) and the Network Operator (TOMRA Cleanaway).

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<sup>1053</sup> Encorp Pacific (Canada), 2018, 2018 Annual Report, available from: <https://www.return-it.ca/ar2018/pdf/AnnualReport.pdf>

<sup>1054</sup> Marsden Jacob Associates, 2018, A Model Framework for Container Refund Scheme in Tasmania

<sup>1055</sup> Exchange for Change, date unknown, Drinks suppliers and exporters, available from: <https://returnandearn.org.au/partners/drinks-suppliers/>

<sup>1056</sup> California Department of Resources Recycling and Recovery (CalRecycle), 2019, Retailers/Dealers, available from: <https://www.calrecycle.ca.gov/BevContainer/Retailers/>

<sup>1057</sup> NSW EPA, 2019, NSW Container Deposit Scheme: retailer obligations, available from:

<https://www.epa.nsw.gov.au/publications/return-and-earn/19p1537-cds-retailer-obligations-fact-sheet>

<sup>1058</sup> Independent Pricing and Regulatory Tribunal. New South Wales Container Deposit Scheme Monitoring the impacts on container beverage prices and competition, 2018

## 16.7 Roles and Responsibilities

The responsibility of scheme participants is to perform their contractual obligations and report on the data, in the required format and timeframe, as is agreed to in their contractual agreement and in accordance with the scheme regulations.

The role of the management of reporting often falls on the scheme Managing Agency and/or scheme regulator. The responsibility of the scheme Managing Agency and/or scheme regulator includes the responsibility to:

- Track registered scheme containers;
- Minimise scheme fraud;
- Manage the roles of others to fulfil their legal obligations and report the correct information;
- Have complete transparency and visibility;
- Manage the scheme account structure and governance;
- Manage payment reconciliations and timelines;
- Manage IT breaches and privacy issues;
- Manage policies and reporting;
- Provide clear and transparent information on the efficiency and performance of the scheme; and
- Ensure clear communication is undertaken between all stakeholders.

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*Through the reporting requirements, continuous communication is an important aspect to developing scheme transparency and trust between the Managing Agency and the scheme participants. In most existing schemes, communication between operators and managing agencies is ongoing and a regulated requirement, since operators are often required to submit regular reports on their operations.*

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Through the establishment of scheme reporting requirements, continuous communication as a function of the NZ CRS design will be an important aspect in developing scheme transparency and trust between the Managing Agency and the scheme participants, including consumers. In most existing schemes, communication between operators and managing agencies is ongoing and a regulated requirement, since operators are often required to submit regular reports on their operations. This is the case in the majority of Australian and American schemes. In Denmark, material re-processors are said to be contractually in continuous communication with the Managing Agency, through contractual obligations and reporting requirements<sup>1059</sup>.

In some situations, external organisations have provided the transparent information required for several global schemes and are known to be responsible for tracking this information. For example, the Container Recycling Institute in California is known to be responsible for tracking the progress of problems and issues that have occurred in American schemes<sup>1060</sup>.

## 16.8 The Aotearoa New Zealand Context

Reporting is one of the most important measures for monitoring and ensuring the continuous success of container return schemes. The requirement for reporting of robust, accurate and consistent information in the NZ CRS design will be vitally important to identify where obligations are not being met by scheme participants and, for example, to ensure correct refunds are calculated and issued. Underpinning reporting requirements is the need to collect comprehensive data (daily, weekly, monthly, quarterly depending on the degree of scheme risk such as fraud mitigation and accuracy and timeliness of invoice payments) based on clear objectives to ensure data is fit-for-purpose and provides the clarity needed to ensure accurate conclusions can be drawn.

<sup>1059</sup> <https://stateofgreen.com/en/partners/dansk-retursystem/>

<sup>1060</sup> Connecticut State, Department of Energy and Environmental Protection, 2020, Bottle Bill FAQ, available from: <https://portal.ct.gov/DEEP/Reduce-Reuse-Recycle/Bottles/Bottle-Bill-FAQ>

Further, while robust reporting will be a critical component in the successful delivery of the NZ CRS, a bespoke legislative instrument(s) will be required to assist the scheme Managing Agency to enforce the scheme reporting requirements. It is also acknowledged that the make-up of the NZ CRS scheme Managing Agency (see Section 14 for further discussion) will require the establishment of clear processes and procedures within the legislative instrument to manage any commercial information and/or data that is confidential and/or sensitive to competitor's market activities.

While it is not the intent to reproduce the findings of the reporting section here, the following list provides non-exhaustive list of specific reporting components that will be incorporated into the NZ CRS design:

- A separate financial accounting system and and Information and Communications Technology (ICT) platform to manage scheme costs;
- Risk, compliance and auditing requirements of scheme participants;
- Annual surveys of scheme participants, including the consumer; and
- Contractual arrangements with container return facilities, the Material Consolidation Facilities and Material Recovery Facilities to ensure that the scheme Managing Agency is able to access these sites and able to obtain information required to measure and manage the performance of the scheme.

To support consumer engagement, confidence and trust in the NZ CRS and visibility of scheme activities, the NZ CRS Managing Agency will ensure full transparency of key scheme performance data including but not limited to transparent annual scheme reports and information disseminated via scheme websites (e.g., total containers returned, value of donations, transparency of end-markets) for public transparency.

Further and notwithstanding the above, the NZ CRS reporting components will meet the requirements of the General Guidelines for Product Stewardship Schemes for Priority Product Notice 2020, as detailed below:

- Targets
  - All schemes will set and report annually to the Ministry for the Environment on targets that include as a minimum:
    - i. significant, timely and continuous improvement in scheme performance;
    - ii. performance against best practice collection and recycling or treatment rates for the same product type in high-performing jurisdictions;
    - iii. a clear time-bound and measurable path to attain best practice;
    - iv. implementation phase-in to reflect availability of markets and infrastructure;
    - v. new product and market development to accommodate collected materials; and
    - vi. measures for public awareness of scheme participant satisfaction and a record of response by the scheme to concerns raised.
  - Targets will be reviewed and adjusted no less than every three years from the date of accreditation, taking into account changes in the market, natural events and technology.

## 16.9 Summary of Key Findings

The outcomes of the above research show that reporting of scheme information is a critical element in assessing the performance and operation of a container return scheme, monitoring and ensuring the continuous success of the scheme and ensuring robust, accurate and consistent information is available to determine where obligations are not being met and ensure correct refunds are calculated and issued. Along with scheme operational and performance data, reporting also provides valuable information to both the Managing Agency and Governance Board to assess the appropriateness of continual scheme

improvement measures so as to maintain scheme performance and consumer engagement – thereby ensuring the scheme meets regulatory requirements, and, importantly meets the needs and expectations of the consumer.

Given the importance of reporting, most global container return schemes have recognised that scheme participants require a specific reporting procedure that acknowledges the participants role and responsibility in the scheme. For example, where a scheme participant is involved in the collection of eligible scheme materials, reporting requirements may involve, for example, accurate records to be held of the number of eligible containers received and accepted and/or rejected, the total value of deposits returned to the consumer or total number of eligible containers transported to a Material Consolidation Facility. Generally, it is the role and responsibility of the Managing Agency coupled with any specific scheme reporting regulations that determines the details of scheme reporting processes and procedures. These requirements are commonly interlinked with the various scheme operational and performance measures such as risk and compliance processes.

Additionally, as part of a schemes operational and performance reporting procedures and as per the regulations, a scheme’s compliance and audit processes may require scheme participants to report data at specific timeframe intervals such as daily, weekly, monthly, quarterly depending on the degree of scheme risk such as fraud mitigation and accuracy and timeliness of invoice payments.

Taking the above research into consideration, the following reporting conclusions can be drawn:

- Reporting is one of the most important measures for monitoring and ensuring the continuous success of the scheme. The requirement for reporting of robust, accurate and consistent information is vitally important to identify where obligations are not being met and ensure correct refunds are calculated and issued, including (Section 16):
  - Track scheme efficiency;
  - Identify areas of improvement;
  - Minimise fraud;
  - End-to-end transactional/chain of custody data and reporting;
  - Ensure participants are being compliant with their obligations;
  - Monitor accurate transfer of money as part of the financial flow of the scheme;
  - Ensure scheme transparency;
  - Track operations against scheme quotas, targets and objectives; and
  - Publish accurate public information such as container return rates.
- Reporting of clear scheme related information is important to ensure operational and financial transparency and where appropriate, is provided to relevant scheme participants (including the consumer). Many of the global container return schemes employ a financial accounting and operational reporting system to manage scheme costs and performance to ensure transparency and auditable records to be maintained and assessed (Section 16.1);
- Reporting requirements vary depending on the scheme participant, including:
  - Consumers may at times be required to report information for the purpose of fraud minimisation where consumers are redeeming a large quantity of containers (i.e., written container declarations for container returns over a specified limit) (Section 16.1.1.2);
  - Where retailers employ a Reverse Vending Machine (RVM) the collection of data and reporting requirements is undertaken automatically through the electronic systems imbedded in RVMs. If containers are accepted and refunded manually, retailers are usually required to collect manual information on the empty containers that they collect and refund, and the accounting, drop offs and collections that they may undertake. Retail staff are often required to be well trained in the reporting requirements that retailers are required to undertake (Section 16.1.1.3 and Section 16.3);

- Beverage and container manufacturer have extensive reporting requirements which are commonly detailed in the regulations of most schemes. In most situations, beverage and/or container manufacturers are required to provide monthly sales data in order to support the Managing Agency, including (Section 16.4):
  - Tracking scheme costs and sending out the relevant invoices;
  - Tracking scheme containers placed on to the market and the eligible containers returned;
  - Having complete transparency and visibility on the performance of the scheme;
  - Identifying areas of improvement; and
  - Ensuring that producers are undertaking their legal obligations.
- Reporting requirements for collection point operators are dependent on the method of container collection with accurate manual counting and recording processes required where manual counting is undertaken. Where automatic counting systems are used such as Reverse Vending Machines, data collection and storage is automatically undertaken by the machine (Section 16.4); and
- Where a Material Recovery Facility (MRF) processes scheme material, the facility is required to keep separate eligible scheme containers, record the receipt, processing, counting, weighing, storage and electronically delivery data so that the throughput of this material through the MRF can always be tracked and audited (Section 16.4).
- Participant surveys have been extensively used as a research method, in order to create well-designed schemes that are based on informed decisions and the needs and experiences of different scheme stakeholders, including (Section 16.2):
  - Employment impacts;
  - Convenience and access of collection point locations and systems;
  - Experience of required obligations;
  - Scheme performance against targets;
  - The market share of different beverages and material types; and
  - Stakeholder experiences.
- Surveys carried out during the design stage have been used to understand if the community supports the proposed scheme and the community's general perception of container return schemes (Section 16.2);
- Surveys carried out during the operational stage of the scheme are used as a mechanism to record and manage faults in the existing system and provide the informed basis for required changes. Understanding the experiences of the participants is important in order to fix problems where they may occur, ensure continuous satisfaction of participants, and guarantee the continuous success of the scheme (Section 16.2);
- Where scheme revisions are undertaken, participants surveys provide an opportunity to ensure that all consumer concerns are addressed, assess and learn from the schemes performance and operation and understand if the public is in favour of the revision (Section 16.2);
- Diversion calculations are important in determining the resource recovery rates and to assess the performance of the scheme against the recovery rates that were set as targets. Additionally, diversion calculations aid in understanding which types of schemes are the most effective (Section 16.3);
- The way in which eligible containers are counted has considerable influence in ensuring accurate recording and reporting of data and the ability to accurately track container return rates. Where manual counting is undertaken, the diversion calculations are dependent on the information provided by the operators of collection facilities and require that operators have accurate manual counting and recording processes. In comparison, with electronic counting systems, the use of Reverse Vending Machines and barcodes allows for data collection and

transfer of information to be simplified, instant and virtually guaranteed, and reduces the logistical requirements for operators (Section 16.3);

- As part of the contractual obligations, container return schemes often require transparent and auditable records to be maintained and assessed by scheme participants, including (Section 16.4):
  - The sales data and financial information of producers, such as records of deposits and refunds, are audited by the Managing Agency. The auditing of producers helps guarantee that accurate financial transparency is provided to relevant scheme participants, and that fraud is not undertaken by producers;
  - Material Processing Facilities (e.g., MCF, MRF) are commonly required to undertake detailed data reporting dependent on the assessment method as per the legislation, to retain transparent data records and ensure compliance with all scheme Managing Agency requirements. In addition, Material Processing Facilities (e.g., MCFs, MRFs) are most often required to undertake internal and independent auditing as and when required by the scheme Managing Agency and/or the respective government; and
  - To ensure equality between all scheme participants, the operations of the Managing Agency can also be independently audited. This is not only undertaken for transparency, but also to improve the operations of the scheme, including complaint handling process and container return facility management.
- The auditing of reported information is vital in ensuring that the Managing Agency is provided with clear and transparent information on scheme performance and financials, the requirements for which are often outlined in the scheme regulations (Section 16.5);
- Public reporting of key performance data by the agency responsible for scheme operations and performance, provides greater clarity and transparency on the efficiency of the scheme and increases the community's trust in the scheme and willingness to participate. In addition to communication of information to the public, the Managing Agency often publishes public information for producers and scheme operators (Section 16.6);
- The responsibility of scheme participants, including the Managing Agency, is to perform their contractual obligations and report on the data, in the required format and timeframe, as is agreed to in their contractual agreement and in accordance with the scheme regulations. Specifically, the Managing Agency role and responsibility is to (Section 16.7):
  - track registered scheme containers;
  - minimise scheme fraud;
  - manage the roles of others to fulfil their legal obligations and report the correct information;
  - have complete transparency and visibility;
  - provide clear and transparent information on the efficiency and performance of the scheme; and
  - ensure clear ongoing communication is undertaken between all stakeholders.

Consequently, the reporting requirements for a NZ CRS will be an important design component that will underpin the ability for the scheme Managing Agency and scheme Governance Board to accurately and transparently report on the scheme's performance. As such and acknowledging the interconnection between requirements for robust reporting and the range of scheme participants (including the consumer), the NZ CRS reporting design components will require the development of processes and procedures that reflect the operational differences for each scheme participant. Consequently, the NZ CRS Managing Agency will be the agency responsible for the development of the reporting processes and procedures whilst being supported and guided by the requirements as set out in the scheme regulations.

Based on the above research conclusions, Section 16.10 below provides a synthesis of this information in the form of the specific reporting components to be included in the NZ CRS design.

## 16.10 Summary of Design Feedback Received

The following table provides a high-level summary of the feedback received from the Scheme Design Working Group (SDWG) members after reviewing the section information. As many suggestions as possible have been incorporated but the NZ CRS Project Team acknowledge that the wide range of views expressed meant not every edit could be accepted. The NZ CRS Project Team is grateful for those who have provided feedback and where possible these have been used to provide further clarity and context throughout this section and to identify areas requiring further assessment during the NZ CRS implementation stage (Section 17).

<b>Reporting Feedback – High-Level Summary</b>	
<b>Areas for further Investigation</b>	
The mechanisms to be used for gathering of data, including for imported beverages (see Section 17 for further discussion).	The audit processes across the whole supply chain including refund points, logistics providers, processors and recyclers (see Section 17 for further discussion).
<b>Do not Support the Following</b>	
Beverage producers to report 'sales data'. It is preferred that reporting of volume supplied by material type is undertaken.	
<b>Support the Following</b>	
Auditing and transparent mechanisms of end to end supply chain, being critical to scheme credibility.	Reporting to include a full suite of KPIs and chain of custody data.
Management of commercial and confidential information of beverage producer, recyclers, processors etc.	The Managing Agency to have oversight of all costs for accurate reporting of regional return rates.
Exporters to claim rebates rather first suppliers.	Sampling plans at MRFs to be undertaken by independent third parties at the cost of MRFs.
Standardising audit processes to industry best practice.	Reporting to be low cost to users, intuitive and standardised.
<b>Additional Design Considerations</b>	
Carbon dioxide and methane emission reductions to be reported.	Kerbside audits to be undertaken rather than diversion calculations.

## 16.11 Component(s) to be Included in the New Zealand Container Return Scheme Design

Taking the above key findings into account including feedback from stakeholders involved in the NZ CRS design and acknowledging reporting requirement synergies with the scheme Governance Board, scheme Managing Agency and scheme participants (e.g., Material Consolidation Facilities, container return



facilities, beverage producers), the Project Team are of the view that the following reporting components will be included in the NZ CRS design:

- Integration of a separate financial accounting system and Information and Communications Technology (ICT) platform to manage scheme costs.
  - The benefit of this approach for a NZ CRS is to enable the Managing Agency to have complete transparency and visibility as they relate to the successful functioning and performance of the scheme.
- Reporting and full transparency of key scheme performance data including but not limited to monthly sales data, value of deposits returned to consumers, number of containers collected for each scheme participant.
  - The benefit of this requirement to Aotearoa New Zealand is to ensure the Managing Agency is provided with clear and transparent information on the efficiency and performance of the scheme whilst highlighting areas of improvement.
- Reporting and full transparency of key scheme performance data including but not limited to transparent annual scheme reports and information disseminated via scheme websites (e.g., total containers returned, value of donations, transparency of end-markets) for public transparency.
  - The benefit of this requirement to Aotearoa New Zealand is to ensure the Managing Agency provides clear, robust and transparent information to the public on the efficiency and performance of the scheme whilst highlighting areas of improvement. Additionally, the scheme Managing Agency will be required to report on the operation and performance of the scheme to the Governance Board and the central government department responsible for running the scheme as per the scheme Regulations.
- Establishment of consistent risk and compliance measures such as auditing of scheme participants (e.g., The New Zealand National Data Framework).
  - The benefit of this approach is primarily driven by the Managing Agency establishing consistent methodology to collect and assess scheme data.
- Annual surveys of consumer and scheme participants.
  - The benefit of this requirement to Aotearoa New Zealand is to record and manage faults in the existing system and provide the informed basis for required changes.
- Risk and compliance measures such as auditing of scheme participants carried out in a way so as to minimise fraud.
  - The benefit of this approach is primarily driven by the Managing Agency to monitor scheme participant compliance with scheme requirements to minimise scheme fraud.
- Notwithstanding the contractual arrangements between the scheme Managing Agency and container return facilities, Material Consolidation Facilities and Material Recovery Facilities, legislative instruments will be required to ensure that the Managing Agency is able to access these sites and able to obtain information required to measure and manage the performance of the scheme.
  - The benefit of this approach is primarily driven by the Managing Agency to monitor scheme participant compliance with scheme requirements to minimise scheme fraud and ensure compliance with scheme requirements and expectations.
- Acknowledging the potential make-up of the Managing Agency, clear processes will be established to manage and protect all commercial information and/or data that is confidential and/or sensitive to competitors market activities.
  - Establishment of a clear process and or individual employee contracts specifically restricting the use of commercial and/or sensitive information and/or data will ensure scheme participants have confidence that commercially sensitive information will be used for scheme purposes only.

- The Managing Agency as owner of the recovered scheme material will give effect to the following:
  - Ensuring that all recovered scheme material is beneficially reused through measures such as legislative drivers, establishment of long-term contractual arrangements, encourage the use of scheme recycled material for the production of containers, ensure scheme material can have adequate quality to be used again for food packaging, undertake regular inspections of approved scheme re-processors ensuring that minimal scheme material is wasted.
    - The benefit of this approach to Aotearoa New Zealand is that the NZ CRS promotes a holistic end-to-end solution requiring the Managing Agency to take ownership and accountability of the end fate of scheme material and the Managing Agency is enabled to promote the outcomes of the pūnaha whakarōpū para - waste hierarchy.

SECTION 17:  
THE NEW ZEALAND CONTAINER  
RETURN SCHEME DESIGN -  
LOOKING AHEAD TO  
IMPLEMENTATION

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## Section 17 The New Zealand Container Return Scheme Design - Looking Ahead to Implementation

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Taking on board the NZ CRS design components discussed throughout the previous 16 sections and feedback from the Scheme Design Working Group (SDWG), the intent of Section 17 is to provide a high-level 'look ahead' into what areas will require further detailed investigation in order to support the implementation of the NZ CRS. For example, the establishment of a detailed communication and marketing plan will be required during the implementation stage targeted to each of the scheme participants in order to support their transition into the scheme by providing clear and transparent information on their roles and responsibilities. In addition, other research areas outside the scope of this NZ CRS design project are considered.

The following sections provide a high-level non-exhaustive summary of the key areas that will support the implementation of the NZ CRS. In addition, commentary is provided on the NZ CRS foundation processes and procedures that will require development. Of note, is the establishment of a bespoke NZ CRS legislative instrument that will set clear expectations (including principles, vision, mission, objectives and measurable targets) that will underpin the ultimate success of the scheme as well as the consequences if scheme outcomes and/or targets are not met.

### 17.1 Regulatory Impact Study

As has been discussed in Section 2 and Section 13, the New Zealand Government has recognised that the current process by which we manage our economy cannot continue via a linear (take-make-dispose) process. There is now growing awareness and recognition that the economy must transition from a linear to *ōhanga āmiomio* - circular (make-use-return) economy. Further, recent international market changes including restrictions by, for example, China on the importation on waste and recyclables and the recent COVID-19 global health pandemic has highlighted the need to take a closer look at the way Aotearoa New Zealand manages waste generated from economic activity, including current onshore processing and recycling (e.g., declaring six (6) priority products requiring producers to develop schemes for Ministerial accreditation to extend producer responsibility for reducing *huringa mataora* – life-cycle impacts of those products). While it is not the intent to restate previous discussions, it is important to note that there are three (3) primary legislative Acts comprising the Waste Minimisation Act 2008 (WMA), the Local Government Act 2002 and the Resource Management Act 1991 (RMA) which impact on the design and establishment of a NZ CRS design.

In addition to the three (3) primary legislative Acts, several other national legislative documents are relevant to the design and establishment of a NZ CRS, including, but not limited to:

- Te Tiriti o Waitangi – The Treaty of Waitangi;
- Litter Act 1979;
- Climate Change Response Act 2002;
- Health and Safety at Work Act 2015;
- Biosecurity Act 1993;
- Trans-Tasman Mutual Recognition Act 1997;
- Australia New Zealand Food Standards Code;
- Imports and Exports (Restrictions) Act 1988;
- Customs and Excise Act 2018;
- Commerce Act 1986;
- Commerce Amendment Act 2018;
- Hazardous Substances and New Organisms Act 1996; and
- Ozone Layer Protection Act 1996.

In addition to the domestic legislation, there are several international agreements that Aotearoa New Zealand is party to that may affect the import and export of waste including recyclable materials, including, but not limited to:

- Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol);
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal;
- [The Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region \(Waigani Convention\)](#);
- Organisation for Economic Co-ordination and Development Decision C(2001)107/FINAL (OECD Hazardous Waste Decision); and
- Stockholm Convention on Persistent Organic Pollutants.

Notwithstanding the information provided in earlier sections discussing the current regulatory environment providing the foundation for the design of a NZ CRS, it is acknowledged that a detailed legal assessment will be required during the NZ CRS implementation stage to ensure all legal components have been addressed and accounted for in the bespoke NZ CRS legislative instrument to support the implementation of the NZ CRS.

A high-level summary of the components comprising the bespoke NZ CRS legislative instrument is provided in Section 17.8 below including broader government requirements anticipated to support the success of the NZ CRS.

Further, it is also acknowledged that the establishment of a bespoke NZ CRS legislative instrument will require good collaboration between organisations (e.g., Manatū Mō Te Taiao - Ministry for the Environment and Te Tai Ōhanga – TheTreasury) and have regard to, and give appropriate effect to regulation principles and regulatory kaitiakitanga whakanaonga - product stewardship responsibilities within the bounds of the specific government department requirements. When establishing a bespoke NZ CRS legislative instrument, the following regulatory system design expectations have been reported by Te Tai Ōhanga – TheTreasury noting that ‘a regulatory system should deliver, over time, a stream of benefits or positive outcomes in excess of its costs or negative outcomes’<sup>1061</sup>. Further Te Tai Ōhanga – TheTreasury<sup>1062</sup> notes the following specific regulatory kaitiakitanga whakanaonga - product stewardship roles and responsibilities which should be considered in the establishment of a bespoke NZ CRS legislative instrument:

- Monitoring, review and reporting on existing regulatory systems;
- Robust analysis and implementation support for changes to regulatory systems; and
- Good regulatory practice.

To support these elements is the requirement for a Regulatory Impact Assessment to support a bespoke NZ CRS legislative instrument proposal (see Appendix E for the Te Tai Ōhanga – TheTreasury Best Practice Impact Analysis Guidance Note). Of particular note for the government agency responsible for the development of the Regulatory Impact Assessment is that the assessment is based on a careful and robust analysis of the proposed NZ CRS legislative instrument and to ensure that the NZ CRS legislative instrument is demonstrated to enhance the public interest. It is anticipated that a Regulatory Impact Assessment to support a bespoke NZ CRS legislative instrument may be required as part of enablement of the NZ CRS implementation phase and be supported by the specific regulatory requirements to facilitate a successful New Zealand Container Return Scheme (e.g., mechanisms to facilitate the objectives of the NZ CRS

<sup>1061</sup> Government expectations for good regulatory practice. New Zealand Government, 2017.

<sup>1062</sup> Government expectations for good regulatory practice. New Zealand Government, 2017.

including promotion of refillables and to give effect to ōhanga āmiomio - circular economy outcomes and any future priority product guidelines).

## 17.2 Implementation Plan

Across the many container return schemes, the scheme design stage was closely followed by an implementation stage whereby the specific components of the scheme (e.g., scheme branding, scheme logo, scheme reporting procedures and requirements, IT platform) were established and formalised, for example, through policies, plans, procedures, guidelines and protocols supported by a bespoke scheme regulation. The intent of the above-mentioned implementation stage is to establish the operational components of the design to facilitate an effective scheme roll-out. It is anticipated that a similar process will be required for the NZ CRS involving an implementation period prior to the formal 'go live' of the scheme.

Along with the establishment of, for example, plans and procedures, the implementation stage will require the establishment of the Managing Agency, or at the very least, the establishment of an interim Managing Agency to support the NZ CRS until the formal go-live date. At this stage the formal Managing Agency will be expected to be in place and take on the leadership and management of the scheme going forward.

Further, it is expected that a transitional Project Team/interim Managing Agency would be required to establish the majority of, if not all, scheme processes and procedures including supporting documentation prior to the scheme 'go-live', including but not limited to the following:

- Confirmation of NZ CRS legal framework and associated bespoke legislative instrument
- Strategic Planning
  - Establishment of a Governance Board and Managing Agency constitution and charter
  - Establishment of scheme visions, mission, objectives
- Operational Planning
  - Development of scheme operational requirements including but not limited to:
    - Procurement processes (e.g., Material Consolidation Facility)
    - Risk and compliance
    - Human Resources
    - Administration
    - Fraud and audit processes
    - Scheme registration for eligible containers
    - Scheme registration for container return facilities
    - IT platform
    - Data verification
    - Education and awareness for scheme participants (e.g., container return facilities)
    - Marketing and communication
    - Legal
    - Financial
    - Logistics and transport

Notwithstanding the above information, the implementation stage will require active and collaborative engagement with scheme participants to ensure that the foundations of the NZ CRS are established and developed to support the ultimate success of the scheme and translation of the specific NZ CRS design components into the foundation documentation of the scheme.

## 17.3 Communication and Marketing Plan

As has been reported throughout the previous sections, the effectiveness of a container return scheme to engage with scheme participants and importantly, the consumer, is underpinned by a fit-for-purpose communication and marketing plan. Generally, this plan is established under the strategic objectives set by the scheme Governance Board and actioned by the Managing Agency with clear requirements established for each scheme participant; acknowledging the unique differences and specific communication requirements for each participant (e.g., producers, retailers, processors, consumers).

To achieve this and acknowledging the various phases in the establishment of a container return scheme, it is anticipated that a communication and marketing plan will be required to support the following broad phases:

- Implementation phase (i.e., pre-scheme roll-out) – for example a plan needed to inform scheme participants of their roles and responsibilities and an awareness campaign for consumers for the upcoming scheme and what this means in terms of behaviour change.
- Establishment phase (i.e., post-scheme roll-out) – for example a marketing and communication campaign to encourage consumer participation, an education plan to support groups such as community organisations and schools to encourage scheme participation.
- Ongoing communication – for example the establishment of regular communications via pathways such as reports, surveys, website updates, social media platforms to provide clear and transparent information regarding the performance of the scheme (i.e., return rate success). This includes, for example, a roadshow to create scheme awareness and drive interest and enthusiasm to potential customers and contractors.
- Other – for example an education plan supporting schools to integrate circular economy scheme objectives into curriculum.

Acknowledging the above list is not an exhaustive assessment of the communication and marketing plan requirements needed, it does provide an indicative platform to take forward into the NZ CRS implementation stage.

## 17.4 Harmonisation of the New Zealand Container Return Scheme Material Flow

As has been discussed throughout earlier sections and at the time of writing, there was no available published information from across the many global container return schemes reporting harmonisation between schemes. However, it is acknowledged that the wide range of products available in Aotearoa New Zealand are also available in many other jurisdictions including Australia where container return schemes are implemented at a state level, albeit each with unique differences. This means that currently Australia has a series of container return schemes each with their own unique attributes and functions meaning they are not harmonised between Australian States. However, it is acknowledged that Australian schemes have adopted several consistent scheme components including a consistent deposit value of AUD10-cents. At present there are still several states (e.g., Tasmania) that do not have a container return scheme in place but are actively investigating a suitable design. How far these remaining schemes take the matter of harmonisation with neighbouring states is unclear but until a nationwide review of all Australian state based container return schemes is undertaken, it is expected that harmonisation of any new schemes may be defined as adopting a scheme model directly from a neighbouring state. However, it is probable that harmonisation and standardisation between Australian state schemes would provide significant benefit to consumers and producers by providing clarity regarding roles and responsibilities.

In the Aotearoa New Zealand context there has been considerable discussion regarding harmonisation of the NZ CRS with Australia (noting that Australia has multiple different container return schemes in place),



including for example adopting the same deposit value of 10-cents (noting there has been no adjustment to NZD) and requiring the same label to be applied to all scheme eligible containers. While the reasons for this are varied, broadly they can be summarised as ensuring minimal cost is incurred by producers to manufacture for example a different label for products sold in Aotearoa New Zealand versus those sold in Australia. In Europe for example, where countries share land borders, no research evidence has been found to suggest any harmonisation between the respective schemes. The European schemes have instead established their own unique bespoke scheme tailored to their citizens, including the establishment of a unique scheme logo and different deposit values. In these cases, where producers sell products cross-border, scheme exemptions are in place to manage the import and export of products sold from one jurisdiction into another. Similar export exemptions occur in Australia and have been discussed throughout previous sections. Further, the Commonwealth Mutual Recognition Act guarantees products can be sold in any Australian jurisdiction without requiring any special labelling.

Notwithstanding the economic relationships Aotearoa New Zealand has with its global partners, recognising the historic partnership between Australia and Aotearoa New Zealand will inform further investigations required during the NZ CRS implementation stage to investigate ways to minimise producer costs from labelling, but ensuring that both countries can operate their own unique schemes tailored to their own citizens and optimise scheme performances.

## 17.5 Disruption of Existing Services

The implementation of the NZ CRS is expected to cause some disruption to several stakeholders including, but not limited to, the retail sector, public and private waste companies (e.g., transfer stations, recycling centres) and Material Recovery Facilities (MRFs – discussed further in Section 17.7). However, the extent to which these stakeholders will be disrupted can be mitigated by ensuring the NZ CRS implementation stage considers each stakeholder’s business operations and then establishes appropriate timeframes to support each stakeholder to adjust business practices where appropriate. Similarly, the NZ CRS implementation stage will require the development of specific processes and procedures for each scheme participant (e.g., retailers, transfer stations, MRFs) to ensure all have clarity, transparency and confidence in their roles and responsibilities. This includes, for example, a roadshow to create scheme awareness and drive interest and enthusiasm to potential customers and contractors.

## 17.6 Impact on Imports and Exports

As has been discussed in Section 17.4, in many container return schemes, suppliers that intend to sell eligible containers outside of a state or country with a scheme are eligible for a refund of the scheme deposits or export exemption. Generally, though, the exporter must enter into an export arrangement with the Managing Agency which will commonly have a series of requirements that the exporter must meet in order to be eligible (e.g., register online as an exporter and sign an exporter deed poll as is the case in New South Wales). Due to the confusion in the first month of the New South Wales scheme operation, a workshop was facilitated to establish the best export exemption process for suppliers, which identified that the exemption process needed to be simple and convenient for a broad range of stakeholders and to ensure that the risk of fraud transactions such as overclaiming is minimised. Taking these findings into consideration, the implementation stage of the NZ CRS design will need to ensure that the appropriate mechanisms are developed to allow for export exemptions and that these are accurately and transparently recorded for audit and scheme compliance.

Similarly, the NZ CRS implementation stage will, working with industry and government agencies also need to address and establish the appropriate processes and procedures to manage products imported into a jurisdiction with a container return scheme. Examples of processes and procedures may include:

- Identification of product ‘ownership’ – the entity that owns the beverage or owns the right to the beverage when it enters into Aotearoa New Zealand.

- Identification of who is the product owner and/or who is the supplier in Aotearoa New Zealand responsible for importing the product (e.g., first supplier).
- Establishment of product registration processes and ensuring appropriate scheme labelling is applied.

In the Aotearoa New Zealand context, it is most probable that products currently produced in Aotearoa New Zealand and exported into other jurisdictions with container return schemes will need to comply with the relevant scheme requirements and any scheme specific regulations (e.g., application of specific labels to adhere to the specific container return scheme). However, as with export exemptions, specific importation scheme requirements will need to be established during the NZ CRS implementation stage.

## 17.7 Impact on Existing New Zealand Collection Schemes

While there is no Container Return Scheme in Aotearoa New Zealand to date, the Government acknowledges the need for co-designed kaitiakitanga whakanaonga - product stewardship schemes to help design waste out of our economy and transition from a linear to a circular economy. Alongside government initiatives such as the General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020, the design of the NZ CRS will help to place a value on containers, reduce the volumes of container litter and increase the opportunities for refilling. The implementation of a NZ CRS will also give effect to ōhanga āmiomio - circular economy outcomes and any future priority product guidelines.

As discussed in Section 2 and for the purpose of ease of reading, the key discussion points are provided here. Across Aotearoa New Zealand's 67 territorial authorities a range of kerbside collection services exist with limited consistency between regions with many local authorities having bespoke collection arrangements. In most cases, local authorities have over time assumed the responsibility and risk associated with the collection (including contamination) and fate of materials collected (e.g., glass, plastics, fibre, metal). In addition, the ownership of commodity products varies dependent on the contractual arrangement and may include, council ownership, private collection company ownership, Material Recovery Facility (MRF) ownership or shared between council/private collector and the MRF.

There are significant challenges within Aotearoa New Zealand regarding hangarua - recycling of products influenced in part by the geographical separation of Te Ika a Maui - the North Island and Te Wai Pounamu – the South Island and factors such as transportation of products from source to processor/manufacturer. For example, at present O-I Glass is the only organisation in Aotearoa New Zealand utilising recovered glass for bottle to bottle manufacturing. Understanding the existing capacity challenges of end markets on and offshore (discussed further in Section 17.7.2.7 below) will continue to be a key consideration during the NZ CRS implementation stage, specifically for procurement. Additionally, understanding the complexities, challenges and limitations that exist within the Aotearoa New Zealand waste and resource management industry is essential to the design and implementation of a NZ CRS, for example, the availability and location of existing infrastructure that can form part of the NZ CRS collection and consolidation network.

Within Aotearoa New Zealand, the Zero Waste Network connects, educates and enables community enterprises including resource recovery centres (RRCs) to work towards ōhanga āmiomio - circular economy outcomes. The geographical spread of New Zealand's RRCs may provide an opportunity to minimise current transportation costs of recycled products and/or provide localised bulking or processing of products while creating employment and social opportunities.

Further, the quality of a material commodity is a significant consideration when determining the value of a product and hence any final end-market. Acknowledging the inconsistent kerbside collection methodologies and the potential for contamination from comingled services, the processing (e.g., cleaning and preparation) of materials is critical to ensure materials receive the best price when traded on the international commodity markets or when supplied to onshore markets. Processing is dependent on the type of material, with, for example, plastics requiring separation into material type to ensure a clean

uncontaminated product depending on the end-market to be sold into. Of the plastics recycled in Aotearoa New Zealand (approximately 45,000 tonnes/annum), approximately 90% of the volume is exported<sup>1063</sup>, however it is possible that this volume has reduced due to factors such as, China National Sword. Glass processing requires colour separation including a beneficiation process to remove contaminants (e.g., bottle top, labels) before the recycled glass is moved through to the furnaces for re-processing. The available information notes that the majority of glass collected via kerbside collections (approximately 148,348 tonnes/annum<sup>1064</sup>) is recycled onshore (e.g., beneficial use including remanufacturing into glass bottles and roading base) with no proportion of this collected volume processed and exported<sup>1065</sup>. In comparison, of the non-ferrous metals (e.g., aluminium and tin) quantities collected from kerbside were reported as approximately 15,000 tonnes/annum<sup>1066</sup>, with greater than 95% processed and exported to offshore markets<sup>1067</sup>.

The following sections provide further information regarding the potential impact of a NZ CRS on existing kaitiakitanga whakanaonga - product stewardship schemes, kerbside recycling and the areas for further investigation to support the implementation of a NZ CRS and a transition from a linear economy to a circular economy.

### 17.7.1 Impact on Existing New Zealand Kaitiakitanga Whakanaonga - Product Stewardship Schemes

To help achieve Aotearoa New Zealand's transition from a linear economy to ōhanga āmiomio - circular economy, the government acknowledges the need for regulated kaitiakitanga whakanaonga - product stewardship schemes to be co-designed as well as ensuring robust assessments are carried out into onshore recycling infrastructure (including the viability of this) to ensure Aotearoa New Zealand has the capacity to support regulated kaitiakitanga whakanaonga - product stewardship, including the collection and reporting of improved waste data.

As discussed in Section 12, Aotearoa New Zealand currently has a voluntary approach to kaitiakitanga whakanaonga - product stewardship although the Waste Minimisation Act 2008 enables the government to declare priority products (i.e., General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020) meaning regulated kaitiakitanga whakanaonga - product stewardship schemes could be established requiring all producers, manufacturers, brands, importers, retailers and consumers of those products to participate.

Also discussed in Section 12 was the inclusion of glass in container return schemes and the contentious matter that this has been, including in the design of the NZ CRS. Briefly some reasons for this contention include:

- Increased cost to products (i.e., deposit and producer fee, administration costs) and the impact this may have on producers, retailers, consumers and sales volumes;
- Kerbside collections provide a convenient way to capture containers;
- Kerbside collection costs are typically rates funded and therefore minimise costs to beverage producers;
- Removing beverage containers from kerbside collections still leaves behind non-beverage glass; and
- Better glass capture rates within kerbside collection systems.

<sup>1063</sup> <https://www.mfe.govt.nz/publications/waste/national-resource-recovery-project-situational-analysis-report>

<sup>1064</sup> WasteMINZ kerbside recycling data 2020

<sup>1065</sup> <https://www.mfe.govt.nz/publications/waste/national-resource-recovery-project-situational-analysis-report>

<sup>1066</sup> WasteMINZ kerbside recycling data 2020

<sup>1067</sup> <https://www.mfe.govt.nz/publications/waste/national-resource-recovery-project-situational-analysis-report>

As such, it is considered an important matter to address by understanding the current state of the voluntary New Zealand Glass Packaging Forum (GPF) and the GPF's reported glass recycling rates. Section 12 provides a detailed summary of the current achievements of the GPF and should be referred to for more detail, however for ease of reading, this has been summarised below:

- There was widespread support from the Scheme Design Working Group (SDWG) to include all containers (including glass).
- The total NZGPF glass capture rate for 2018/19 has been calculated as 60%.
- The NZGPF Voluntary Glass Scheme has been operating for approximately 15-years.
- The NZGPF Voluntary Glass Scheme excludes the cost of collections, a requirement of an Extended Producer Responsibility scheme, estimated at \$55million per year.
- The estimated kerbside collection cost for glass beverage container is equivalent to approximately NZD10.29-cents per container.
- The bottle to bottle recycling rate is estimated at 48%.
- There is an excess of glass material (bottles) in the order of 110,000 tonnes per annum.
- The amount of glass ending up in ruapara - landfill and stockpiles may be greater than what has been reported in the NZGPF Accreditation Report (2018/19).
- The NZGPF are currently reviewing their reporting methodology which is reliant on scheme participant tonnage declarations.

Taking this information into consideration, it is clear that further detailed investigation is needed to provide clarity and transparency on the current status of the NZGPF Voluntary Glass Scheme and to step back and identify what changes are required to significantly lift the glass capture rate closer to what is typically achieved in high-performing schemes (85%+). This includes the option for glass to be included in the NZ CRS. Additionally, the implementation of the NZ CRS will also require future proofing of the scheme to enable and facilitate the expansion of, for example, a wider range of eligible containers to be included over time (e.g., kitchen, bathroom, laundry, garage and garden – as discussed in Section 3) and the collection of other kaitiakitanga whakanaonga - product stewardship materials (e.g., e-waste) at NZ CRS container return facilities (e.g., manual return facilities). At the time of writing the NZ CRS Project Team was informed by the NZGPF that a project is underway to design and cost an alternative option from the NZ CRS to recover glass. The outcome from this could be considered in finally determining whether glass is included or not within the NZ CRS.

### **17.7.2 Impact on Existing New Zealand Kerbside Collections**

As discussed in Section 7 and Section 11, it is acknowledged that the implementation of a container return scheme has a significant impact on kerbside recycling services provided by local authorities through mechanisms such as a reduced volume of recyclables collected from kerbside and a change to the composition of collected recyclables (i.e., kerbside recyclable composition is expected to result in a decrease in the quantity of eligible scheme material compared with pre-container return scheme quantities).

The introduction of a NZ CRS is expected to see the balance of eligible containers remaining in kerbside to range between 10% and 20%. The actual amount will depend on the motivation and behaviour of consumers to redeem containers themselves as influenced by, for example, convenience of container return facilities and financial refunds from the deposit value.

Given the range of different kerbside recycling collection services that exist across the country it will be for each local authority and/or private collection company to assess the balance of materials remaining and as covered above what arrangements will be made for any revenue sharing of unredeemed containers.

The financial impacts of the NZ CRS are given in the Financial Model Map provided in Section 11.

The following sections acknowledge the outcomes of the NZ CRS design research and highlight specific areas that Aotearoa New Zealand local authorities should be aware of and undertake further investigation to better understand the current and projected impacts of the NZ CRS on local and/or regional waste flows.

### 17.7.2.1 Volume Reduction at Kerbside

It is acknowledged that current kerbside recycling collections provide a convenient service and capture recyclable containers for products that are consumed at home. However, it is also acknowledged that kerbside recycling is limited in its ability to collect beverage containers that are littered in the environment as this is most often related to, for example, consumer behaviour (e.g., the ability to recycle) and/or the availability of recycling services (e.g., council provided recycling bins).

Recognising the quantity of single-use containers entering the taiao - environment through the litter stream may ultimately end up in ruapara - landfills, many container return schemes have been established to capture single-use beverage containers typically consumed away from home. However as has been discussed in earlier sections, the objectives of many container return schemes are evolving from a litter perspective to one of resource recovery and affecting the principles of the pūnaha whakarōpū para - waste hierarchy – reduce, reuse and recycle.

Acknowledging the above, the implementation of a NZ CRS will incentivise consumers via a financial deposit to return containers for recovery, whakamahi anō - reuse and hangarua - recycling. The behaviour change associated with a NZ CRS will reduce the prevalence of littering and reduce the loss of eligible scheme containers to ruapara - landfill. Consequently, the quantity of recyclables (i.e., those eligible scheme containers) collected from kerbside will reduce, resulting in a reduction in the amount of recyclable material processed at Material Recovery Facilities (MRFs). To understand the potential impacts of a NZ CRS at a local and/or regional level, each local authority would need to estimate the volume and composition (e.g., eligible versus ineligible scheme material) based on current volumes and population. To achieve this, the methodology and results of the recently published 'Rethinking Rubbish and Recycling'<sup>1068</sup> report will provide a helpful guide to local authorities.

### 17.7.2.2 Composition of Kerbside Recyclables

As discussed in Section 17.7.2.1 above, the implementation of a NZ CRS is expected to change the composition of recyclable material entering kerbside recycling collection due to consumers collecting and redeeming refunds on scheme eligible containers. However, as discussed in earlier sections, consumers will still have available to them the option to dispose of eligible scheme material via kerbside recycling collections, but in this case, the consumer would not be eligible for the container refund amount.

Consequently, the composition of kerbside recycling collections will be dependent on how the consumer engages with the NZ CRS collection network. To understand the impact of a NZ CRS on kerbside recyclable composition, local authorities will need to individually assess current recyclable waste flows as well as investigating the potential impact of compositional changes on collection methodologies (e.g., kerbside sorted versus comingled). The outcomes of the National Resource Recovery Report Situational Analysis Report may provide the basis for local councils to investigate opportunities for kerbside recyclable collection improvements. As mentioned above, it is expected that between 10% and up to 20% of eligible containers may remain in the kerbside recycling collection depending upon consumer motivation and incentives to redeem containers.

### 17.7.2.3 Kerbside Collections

A change in the volume and composition of kerbside recyclables may also have an influence on the collection process, including, for example, the number of trucks required to collect kerbside recyclables, the type of truck required, and the collection frequency currently provided by each local authority or

<sup>1068</sup> Rethinking Rubbish and Recycling, May 2020. Prepared for WasteMINZ TAO Forum. Sunshine Yates Consulting Limited

private/commercial operators. The implementation of a NZ CRS is expected to result in a reduced kerbside recyclable volume which may provide local authorities with an opportunity to implement collection process improvements such as reduced collection frequencies, smaller collection vehicles or route optimisation and pass on these cost savings to their respective ratepayers.

While there is no national standardisation of kerbside recyclable collections, each local authority will need to undertake its own assessment of any impacts and/or collection process opportunities likely to be affected by the implementation of a NZ CRS.

#### **17.7.2.4 Standardisation of Kerbside Collections**

To date there is no national standardisation of local authority kerbside recyclable collections, including standardisation of the type of recyclables accepted for collection. In both cases, local authorities determine the collection method and the type of recyclables to be collected meaning there is generally no consistent messaging and/or processes between local authorities.

It is expected that the implementation of a NZ CRS will likely result in local authorities having to reassess current recyclable waste management practices due to reduced recyclable volumes and compositional changes, which in turn may lead to some local authorities changing the current kerbside collection methodology (e.g., comingled to segregated).

#### **17.7.2.5 Quality of Recyclables**

The research presented throughout the preceding sections has shown that container return schemes generally result in high quality recyclable material due to the lower contamination rate and cleaner material which is generally attributed to the consumer needing to meet strict scheme container eligibility criteria in order to access the appropriate refund.

Where local authorities offer a comingled recycling collection service (e.g., fibre [paper and cardboard], plastics, glass, aluminium), recyclable material can become contaminated with other materials (e.g., fibre contaminated with broken glass) resulting in a potential reduction of material quality. Similarly, contamination of kerbside recyclables can also occur through other mechanisms including, but not limited to, consumers contaminating containers with organic material or contaminating recyclables with non-recyclable material thereby decreasing the quality of the material.

It is envisaged that the implementation of a NZ CRS will see local authorities and private collectors work with the local Material Recovery Facility (MRF) to investigate ways to improve the capture of eligible scheme material by, for example, investigating process improvements (e.g., reduced conveyor belt speed to facilitate better eligible scheme material capture) or potential investment in new processing infrastructure to future proof the MRF. The benefit to local authorities may be a reduction of eligible scheme material being sent to ruapara - landfill due to contamination of kerbside collected recyclables and processed at the MRF, but this will require further work by the local authority to continually educate and inform the public about what can and cannot be recycled. It is expected that any cost savings experienced by local authorities will be passed on to ratepayers (e.g., line item on targeted rates bill).

#### **17.7.2.6 Contractual Arrangements**

As with kerbside collection of recyclables, each local authority has a bespoke set of contractual arrangements to manage kerbside recycling, with for example, contracts in place for the short, medium or long-term and subject to varying renewal requirements. The implementation of a NZ CRS is expected to result in local authorities assessing the potential opportunities to streamline current contracts, seek to renew contracts under existing or amended conditions to reflect the influence of the NZ CRS or establish new contracts to reflect the new operating environment such as taking into consideration reduced kerbside recycling volumes and financial impact this has on the MRF operator. It will be the responsibility of each local authority to assess current contractual arrangements and determine the best course of action to support future process efficiencies.

### 17.7.2.7 End-Markets

Securing sustainable end-markets is one of many key considerations in the establishment of any recycling scheme and equally applies to container return schemes particularly where there are limited markets for the collected materials (e.g., liquid paperboard and excess glass) and supply of material exceeds demand. Aotearoa New Zealand is no different to other global countries where the recent China National Sword and COVID-19 health pandemic implications have resulted in countries having to reassess waste management practices, including the ability to access international commodity markets or promote and encourage onshore/in country processing.

While it is not the intent of the NZ CRS design to provide a detailed assessment of the current, projected and future national and international end-markets or to make comment on what may be considered commercially sensitive contractual arrangements, it is important to note here that the Managing Agency through national and international contractual arrangements (see Section 14) will have ownership, clarity and transparency on the full huringa mataora – life-cycle of the material to ensure scheme eligible material is used for beneficial use. Similarly, the NZ CRS design has incorporated the application of an Advanced Material Recycling Fee (AMRF) to be applied to difficult to recycle materials (e.g., liquid paperboard) to both financially incentivise producers to move towards more sustainable and/or recyclable material and provide funds to support, for example, infrastructure to process those difficult to recycle materials onshore or transport off-shore depending on the beneficial use options available. Similarly, international research has shown many countries have, and continue to, implement an environmental/eco-fee to incentivise producers to move from single-use containers to refillable containers thereby reducing the quantity of single-use containers on the market and in the post-consumer waste stream.

Taking into consideration the markets for recyclables collected and processed in Aotearoa New Zealand, the work undertaken by this project has established there is a surplus of glass with a proportion of this surplus, estimated at 110,000 tonnes, unaccounted for and presumably going to landfill and/or stockpiles. Further, while some plastic grades such as PET and HDPE have markets within Aotearoa New Zealand and overseas, other products such as liquid paperboard (LPB) do not and are often landfilled. In keeping with achieving ōhanga āmiomio - circular economy approach and outcome and in adopting the pūnaha whakarōpū para - waste hierarchy to avoid or reduce/reuse, there needs to be a change. Table 31 illustrates at a very high-level the fate for Aotearoa New Zealand’s recyclable materials as to whether this can be processed for beneficial use onshore or offshore. As discussed in Section 13, LPB collected in British Columbia is pulped with fibre used to make paper, toilet paper, cardboard boxes and other paper products. In the NZ CRS context, the Managing Agency will be responsible for the beneficial use of materials which may include both onshore and offshore markets. It is also acknowledged that the local demand for some of these materials exceeds their supply and/or demand and so it will be the responsibility of the Managing Agency to determine what will give the best outcome for New Zealand in keeping with the objectives of the NZ CRS design.

**Table 31: End markets for New Zealand recyclable material**

Material	On-Shore Beneficial Use	Off-Shore Beneficial Use	Comments
Glass	Yes	Unlikely	Recovered glass is generally not exported and will therefore need to be beneficially used onshore. There is limited processing capacity to return glass back into glass containers notwithstanding the demand for glass containers needs to be equal to the supply. The opportunity exists for a long-term supply win-win arrangement with on-shore processing to meet quality, quantity and commercial requirements. Options for surplus glass includes crushing for roading at a cost of NZD\$40 to NZD\$50 per tonne followed by grinding into sand at a cost of NZD\$80 to NZD\$100 per

Material	On-Shore Beneficial Use	Off-Shore Beneficial Use	Comments
			tonne. This approach ensures all glass is beneficially used.
Polyethylene terephthalate (PET)	Yes	Yes	The demand for PET both onshore and offshore is expected to exceed the supply subject to commodity pricing. The current value is approximately NZD\$200 per tonne.
High-density polyethylene (HDPE)	Yes	Yes	HDPE is expected to be beneficially used both onshore and offshore and is subject to commodity pricing. The current value is approximately NZD\$500 per tonne.
Aluminium	No	Yes	Aluminium and metal will be exported offshore only as Aotearoa New Zealand does not have processing facilities for these materials. The value of aluminium and other metals is subject to commodity pricing. The current value of Aluminium is approximately NZD\$1,250 per tonne. The current value of steel is approximately NZD\$165 per tonne.
Steel	No	Yes	
Liquid Paperboard (LPB) (fibre, aluminium and plastic)	Not at this stage	Potentially	Options for beneficial use of LPB are not fully understood but, based on the information available, is likely to see this exported at a negative cost yet to be determined. For example, we understand that LPB is exported from Australia to the United States of America where it receives \$10 per tonne but the costs to transport this is \$190 per tonne. The Advanced Material Recycling Fee would be used to cover the net difference to ensure that beneficial use could occur and that LPB materials did not end up in ruapara - landfill.

### 17.7.2.8 Value of Recovered Materials

The quality of recyclable materials is a significant consideration when determining the quality and value and hence, any final end-market. Acknowledging the inconsistent kerbside collection methodologies throughout Aotearoa New Zealand local authorities, the processing (e.g., cleaning and preparation) of materials is critical to ensure materials receive the best price when traded on the commodity markets. Processing is dependent on the type of material (e.g., optical sorting), with, for example, plastics requiring separation into material type to ensure a clean uncontaminated product depending on the offshore end-market to be sold into. Glass processing requires colour separation including a beneficiation process to remove contaminants (e.g., bottle top, labels) before the recycled glass is moved through to the furnaces for re-processing.

As has been discussed in Section 17.7.2.5 above, it is likely that the implementation of a NZ CRS will assist local authorities and/or private collectors to work with the local Material Recovery Facility to investigate ways to improve the capture of eligible scheme material by, for example, investigating process improvements (e.g., reduced conveyor belt speed to facilitate better eligible scheme material capture) or potential investment in new processing infrastructure. The benefit to local authorities may be a reduction of eligible scheme material being sent to ruapara - landfill due to contamination at the processing facility but will require further work by the local authority to continually educate and inform the public about what can and cannot be recycled.



### 17.7.2.9 Revenue Sharing Arrangements

As the research has illustrated in Section 7, several container return schemes in Australia have established revenue sharing arrangements (including a transitional period) between the local council and the local Material Recovery Facility (MRF) for eligible containers collected via kerbside recycling collections and subsequently recovered in the MRF. Acknowledging that there are a number of variables when establishing a suitable revenue sharing arrangement, including where the risk sits and the organisation responsible for investments in infrastructure, local authorities and private collectors will need to assess current contractual arrangements with their local MRF and determine whether a revenue sharing arrangement is established within the current contractual arrangement or the establishment of a new arrangement. Similarly, the revenue sharing arrangement will need to consider the value and associated risks of the activities undertaken by both the local authority and the MRF to provide clarity and transparency on the revenue split between both parties. However, as noted in Section 7, local authorities may choose to use the opportunity of recognising revenue from containers in the recycling bin to offset recycling collection costs incurred by ratepayers and at the same time, financially incentivise the MRF operator to make all appropriate efforts to separate out and redeem eligible containers (in accordance with the scheme acceptance criteria). Feedback from the SDWG has suggested revenue between the local authority and the MRF could be shared 50/50 (default starting point) or at an agreement arrived by both parties making sure no party is disadvantaged nor gains a windfall from the NZ CRS with any surplus returned to the ratepayer. Notwithstanding this and any contractual requirements between MRF operators and local councils, it is recommended that a revenue sharing arrangement be established between the local council and the MRF and set at a level that will incentivise the MRF to fund processing and maximise recovery of eligible containers and ensure the MRF operation remains financially viable.

While the implementation of a container return scheme is likely to provide MRFs, private collectors and councils with revenue from recovered eligible containers, this must be considered in the overall context where the amount of recyclable material entering a MRF from kerbside collections will decrease as consumers seek to redeem the deposit value. However, the impact of any changes in recyclable material entering a MRF is also dependent on the MRF's broader commercial arrangements and their ability to offset the loss of kerbside material with other sources of recyclable material. Section 11 should be referred to for the full discussion of the impact of container return schemes on kerbside recycling.

To summarise, local authorities are encouraged to engage with the MRF operators to reach a mutually acceptable revenue sharing arrangement.

### 17.7.2.10 New Zealand Container Return Scheme Financial Model

The outcomes of the financial model assessment for the impacts of a NZ CRS on kerbside recycling collections have been discussed throughout Section 11 and are based on a series of model assumptions as previously presented to the SDWG.

Subject to the NZ CRS design proceeding to the implementation stage, the Managing Agency will need to establish a full financial operating model for the scheme that provides detailed costings and budgets for:

- Managing Agency;
- Collection depots;
- Transport of materials (as determined by location of collection points and logistics options including back-hauling);
- Scheme Material Consolidation Facility; and
- Material Processing Facilities / end markets.

The financial information will be used to recognise any cost adjustments to the scheme fee and overall NZ CRS cost. This is a significant element of work that will need to be resourced appropriately in the lead up to scheme roll-out.

### **17.7.2.11 New Zealand Container Return Scheme Cost Benefit Analysis**

The Cost Benefit Analysis (CBA) as summarised in Section 12 discussed the impact of the NZ CRS on kerbside recycling collections. Local authorities should determine from this and the financial model what the likely impacts will be for their particular region, for example a reduction in collection fleet or collection frequency. Acknowledging the different collection methodologies that exist in Aotearoa New Zealand, it will be at the individual local authorities' discretion as to how this information is used to help inform the likely measures needed to accommodate a NZ CRS in their respective region, but that it provides a helpful guide to local authorities.

### **17.7.2.12 Impact on Ratepayers**

As discussed in Section 17.7.2.9, it is recommended that local authorities use the opportunity of recognising revenue from containers left in the kerbside recycling bin (i.e., revenue sharing arrangement with the local MRF) to offset recycling collection and processing costs incurred by ratepayers. Similarly, as has been discussed throughout Section 17.7, local authorities should also use the opportunity of recognising savings from, for example, reduced kerbside recycling collections and improved route optimisation to offset or reduce recycling collection costs and pass these savings on to ratepayers.

Notwithstanding the potential savings to ratepayers, the NZ CRS relationship with kerbside recycling services may also assist in informing ratepayers of the benefits associated with ensuring that recyclables meet local authority quality requirements to support and promote the establishment of end-markets, for example, through improved cleanliness of recycling.

Based on this information, each local authority will need to assess on an individual basis what benefit can be transferred to their respective ratepayer base.

### **17.7.2.13 Other Matters for Consideration**

As discussed throughout the above sections, an important element for the NZ CRS design is the minimisation of unintended perverse outcomes such as driving higher eligible container return rates via kerbside recycling to support higher revenues for both MRFs and local authorities. This could occur, for example, if the local authority and or MRF operator do not use opportunities available to them to promote awareness of the scheme.

To reduce this risk, one option to consider is that any revenue sharing between MRF operators and local authorities is limited to the handling fee amount only, not the deposit. This would reflect the same payment made to a collection point. The unredeemed container deposits given up by consumers choosing to place eligible scheme containers in kerbside recycling would then be used to reduce overall scheme costs.

The Managing Agency and the associated Governance Board will be responsible for the ultimate success of the scheme and so will need to work closely with all scheme participants to ensure that scheme objectives are aligned with the roles and responsibilities of, for example, local authorities and MRFs where a revenue sharing arrangement is established. As a result, the NZ CRS implementation phase will require the establishment of a risk and compliance platform to address this matter and others, including fraud minimisation and transparency of data and information.

## **17.7.3 Impact on Quality of Material, End-Markets and Infrastructure**

As discussed in Section 7 and Section 11, it is acknowledged that the implementation of a container return scheme is anticipated to have an impact on the quantity and quality of material collected through the NZ CRS, via kerbside recycling collections and processed through Material Recovery Facilities (MRFs). As will be discussed in the following sections, the quantity of kerbside recyclables processed by MRFs will generally reduce but the financial impacts of this may be offset by, for example, the establishment of a suitable revenue sharing arrangement with local authorities for those eligible scheme containers collected and

processed, infrastructure investment and/or current process improvements to extract a higher proportion of eligible scheme material and the subsequent sale of this material to markets. However, as with any market changes, collaboration and active partnerships with those affected parties is needed to facilitate new opportunities supported by robust assessments of financial impacts, material huringa mataora - life-cycle, end-markets and ensuring that supporting legislation and or government guidance is in place and/or in preparation.

The following sections broadly discuss the potential infrastructure impacts of a NZ CRS on MRFs including the financial ramifications. It is acknowledged that further detailed work will be required during the NZ CRS implementation phase to establish the current and projected impacts of a NZ CRS on local and/or regional waste flows as well as onshore processing and manufacturing capacity.

### 17.7.3.1 Material Recovery Facility Considerations

The implementation of a NZ CRS is anticipated to result in a reduction in the quantity and composition of recovered kerbside recyclables meaning the Material Recovery Facilities (MRFs) will have a reduced volume to process, sort and prepare for transportation to end-markets. Consequently, the quantity and composition of recyclables (i.e., those eligible scheme containers) collected from kerbside will reduce, resulting in a reduction in the amount of recyclable material processed at MRFs.

As discussed in Section 17.7.2.5, it is likely that the implementation of a NZ CRS will assist local authorities to work with the local MRF to investigate ways to improve the capture of eligible scheme material by, for example, investigating process improvements (e.g., reduced conveyor belt speed to facilitate better eligible scheme material capture) or potential investment in new processing infrastructure to future proof the MRF. The benefit to local authorities may be a reduction of eligible scheme material being sent to ruapara - landfill due to contamination of kerbside collected recyclables and processed at the MRF, but this will require further work by the local authority to continually educate and inform the public about what can and cannot be recycled.

However, it should also be acknowledged here that the research does suggest that the implementation of a container return scheme is generally coupled with a decrease in MRF revenue resulting from the reduced kerbside recyclable volumes but that is somewhat offset by the establishment of revenue sharing arrangements, depending on the contractual and any risk sharing arrangements. Further, the specifics of these arrangements are expected to be determined between the MRF and Territorial Local Authority with any contractual arrangement established between these two parties. While the scheme Managing Agency is not anticipated to be involved in these discussions and/or contractual negotiations, it is likely to have oversight of the process and/or require confirmation that such an agreement was in place to ensure transparency on how the scheme fees are to be paid to the MRF and the local authority. The local authority/MRF revenue split arrangement may potentially be influenced by factors such as, quality of material and be based on factors such as education and information to ratepayers to support reduced kerbside contamination rates, and, improved MRF processes to extract higher quantities of recyclables that meet the NZ CRS container acceptance criteria. However, the default position could have the deposit shared 50/50 between the MRF and the Territorial Local Authority making sure no party is disadvantaged nor gains a windfall from the NZ CRS with any surplus returned to the ratepayer.

Further, it is also acknowledged that the implications of China National Sword and the recent COVID-19 health pandemic has highlighted the need and opportunity for greater onshore processing supported by public education and information on recycling 'clean' (i.e., uncontaminated) recyclables and kerbside collection methodologies to improve recyclable quality. However, the significant reduction in global end-markets is now placing significant pressure on the recycling industry to ensure materials can be moved rather than stockpiled, and which is interconnected with local authorities supporting the recycling industry by maximising the quality of recyclable materials. While there is no silver bullet that will immediately solve this issue, a broader national holistic approach including, for example, investment in onshore processing technology and capacity, producers incentivised to use greater quantities of recycled material in the

production of containers and packaging, implementation of an eco-fee to incentivise producers to move from single-use packaging to reusables (i.e., refillables), improved kerbside recyclable collections (e.g., comingled versus segregated), support to future proof MRF infrastructure and a detailed investigation of Aotearoa New Zealand's current, projected and future waste infrastructure requirements is needed to provide clarity and direction to support a transition from a linear economy to a circular economy.

### 17.7.3.2 Material Recovery Facility and Handling Fees

Revenue sharing arrangements (including a transitional period) have been established for several container return schemes in Australia between the local council and the local MRF for eligible containers collected via kerbside recycling collections. Similarly, where this arrangement was established, there was no available information noting the MRF receiving a handling fee, as is the case for container return facilities.

Acknowledging that there are a number of variables when establishing a suitable revenue sharing arrangement, including where the risks and benefits sit and the organisation responsible for investments in infrastructure and the quality of eligible scheme material received via kerbside collections (e.g., contaminated with organic matter), local authorities will need to assess current contractual arrangements with their local MRF and determine whether a revenue sharing arrangement is established within the current contractual arrangement from unredeemed deposits or the establishment of a new arrangement. Similarly, the revenue sharing arrangement will need to consider the value and associated risks of the activities undertaken by both the local authority and the MRF to provide clarity and transparency on the revenue split between both parties.

An important element for the NZ CRS design is the minimisation of unintended perverse outcomes such as driving higher eligible container return rates via kerbside recycling to support higher revenues for both MRFs and local authorities. This could occur, for example, if the local authority and or MRF operator do not use opportunities available to them to promote awareness of the scheme. To reduce this risk, one option to consider is that any revenue sharing between MRF operators and local authorities is limited to the handling fee amount only, not the deposit. This would reflect the same payment made to a collection point. The unredeemed container deposits given up by consumers choosing to place eligible scheme containers in kerbside recycling would then be used to reduce overall scheme costs.

As discussed in Section 17.7.2.7, the NZ CRS design has incorporated the application of an Advanced Material Recycling Fee (AMRF) to be applied to difficult to recycle materials (e.g., liquid paperboard) to both financially incentivise producers to move towards more sustainable and/or recyclable material and provide funds to support, for example, infrastructure to process those difficult to recycle materials onshore or transport off-shore depending upon the beneficial use options available. Similarly, international research has shown many countries have, and continue to, implement an environmental/eco-fee to incentivise producers to move from single-use containers to refillable containers thereby reducing the quantity of single-use containers on the market and within the post-consumer waste stream.

## 17.8 Regulation Requirements to Support a Bespoke New Zealand Container Return Scheme Regulation

As has been discussed throughout Section 13, the outcomes of this research, as well as reported case study examples of well performing container return schemes, suggest that a bespoke NZ CRS legislative instrument may be required to provide clearly defined scheme specific conditions. As a result, the intent of a bespoke NZ CRS legislative instrument will be to provide the necessary clarity to all scheme participants on their respective roles, responsibilities, and importantly, requirements of the scheme to meet consumer expectations. The bespoke NZ CRS legislative instrument may include, but not be limited to, the following components:

- Scheme licensing and registration requirements;
- Import requirements;

- Export exemption requirements;
- Authority to apply and administer the NZ CRS fee including the deposit, scheme fees, Advanced Material Recycling Fee and potentially an Environmental/Eco-Fee;
- Transparency and pass through requirements for the NZ CRS scheme fees and deposits;
- A minimum eligible container return rate of 85%;
- An ambitious eligible container return rate target of 95%;
- Specifying the number of container return facilities;
- The structure and function of the Managing Agency and scheme Governance Board;
- The role and responsibility of the Managing Agency and scheme Governance Board;
- Eligible container conditions of acceptance, including labelling;
- Requirements to consider revenue sharing arrangements between local authorities and MRF's (actual outcomes determined between the parties on a case by case basis);
- Reporting requirements;
- Conditions regarding the use of any unredeemed deposits; and
- Scheme review periods to assess, for example, scheme performance and deposit level.

Consequently, the above list provides an indicative framework of the key regulatory components for consideration in the establishment of a bespoke NZ CRS legislative instrument. The specific components will be established during the NZ CRS implementation stage and will inform both the Regulatory Impact Assessment and the development of the bespoke Regulations.

It is also acknowledged that a detailed legal assessment will be required during the NZ CRS implementation stage to ensure all legal components have been addressed and accounted for in the bespoke NZ CRS legislative instrument to support the implementation of the NZ CRS.

## 17.9 Component(s) to be Taken Forward to the New Zealand Container Return Scheme Implementation Stage

Table 32 below provides a non-exhaustive high-level overview of the social, economic, environmental, cultural and regulatory areas requiring further investigation or research during the NZ CRS implementation stage to understand the broader impacts and opportunities that the NZ CRS will have on, and bring to, Aotearoa New Zealand. Further, Table 32 has been developed from feedback received from the Scheme Design Working Group (SDWG) as well as several government department stakeholders including Ministry of Foreign Affairs and Trade and Office of the Prime Minister's Chief Science Advisor.

A broad summary of why each selected area has been included is included to provide context to the implementation of a NZ CRS design. The below list is built on the findings of the NZ CRS design research, feedback from the SDWG as well as outcomes of informal conversations with both national and international organisations and individuals. Therefore, based on this information the Project Team are of the view that the following areas are included for further research in the NZ CRS implementation stage.

**Table 32: Social, economic, environmental, cultural and regulatory areas requiring further investigation in the New Zealand Container Return Scheme implementation stage**

New Zealand Container Return Scheme Implementation Stage – Areas for further Investigation	Reason for Inclusion
<b>Social</b>	
Establishment of a scheme implementation plan with consideration given to, for example, government COVID-19 Recover Planning and reprioritisation of existing work plans.	To establish the operational components of the design to facilitate an effective NZ CRS roll-out, including, for example, an appropriate transition period.
Establishment of a scheme communication and marketing plan.	To engage with scheme participants and importantly the consumer, underpinned by the NZ CRS strategic objectives with clear requirements established for each scheme participant; acknowledging the unique differences and specific communication requirements for each participant (e.g., producers, retailers, processors, consumers [e.g., marketing techniques such as consumer perceptions of value lost versus value gained]).
Social and indigenous procurement contractual arrangements.	<p>To provide a strategic tool for achieving key NZ CRS objectives: from budget accountability, to scheme spending efficiency, to tackling climate change, and promoting socially responsible suppliers into the NZ CRS value chain.</p> <p>To facilitate small to medium sized social enterprises to access scheme contracts.</p> <p>To support a more ōhanga āmiomio - circular economy and transform supply-chain business models.</p>
Investigate the potential influence of seasonal population influxes due to tourism (e.g., Rotorua, Queenstown) and associated volumes of eligible scheme containers on the ability of container return facilities to process larger volumes.	To identify opportunities and/or constraints for seasonal workforce placements.
Investigate and establish a database of Aotearoa New Zealand charity organisations that may be supported through a NZ CRS deposit donation platform.	To support the efficient application of a deposit donation platform at scheme kick-off.
Establish a single NZ CRS brand.	To help embed consumer awareness of and engagement in the scheme.

New Zealand Container Return Scheme Implementation Stage – Areas for further Investigation	Reason for Inclusion
<b>Economic</b>	
Mapping of container return facility locations, Material Consolidation Facility (MCF) and Material Recovery Facility (MRF) locations overlaid with transportation route optimisation modelling and consumer travel journey's (e.g., multi criteria analysis to help inform the optimal container return facility network infrastructure, carbon footprint).	To reduce scheme related greenhouse gas emissions and progress Aotearoa New Zealand's obligations under the Kyoto Protocol.
Scheme participant transition period requirements.	<p>The benefit of a transition period to Aotearoa New Zealand beverage producers is to ensure producers are provided sufficient time to adjust to scheme requirements and establish new processes where needed.</p> <p>For example, to help retailers transition old stock and ensure enough time is available to stock with eligible containers before the end of the transition period.</p>
Detailed investigation of current and projected Aotearoa New Zealand infrastructure to support and/or complement a NZ CRS (e.g., consumer journey mapping, location of retailers, volume capacity, condition assessment, regulatory consents, current and future waste flow analyses, lease arrangements for container collection infrastructure such as RVMs).	<p>To enable the NZ CRS to grow and expand over time to reflect increases in return rates and integrating transport efficiencies where possible.</p> <p>For example, it is envisaged that expansion of the Material Consolidation Facility (MCF) could include existing Territorial Local Authority (TLA) owned/contracted resource recovery infrastructure (e.g., resource recovery centres) which could become an expansion of the NZ CRS MCF network.</p>
Detailed investigation of the practical considerations for establishing a Material Consolidation Facility (MCF), including but not limited to land availability, resource consents, acquisition of plant and equipment, funding requirements.	To understand what requirements must be met in order to establish suitable MCF location(s).
Assess volume efficiencies for Material Consolidation Facilities (MCFs) and container return facilities.	To understand the eligible container volumes required to maintain facility viability.
Measurement and reporting requirements for materials that are received and weighed.	Understand the degree of accuracy needed for scheme payments to be acceptable to parties involved.

New Zealand Container Return Scheme Implementation Stage – Areas for further Investigation	Reason for Inclusion
Detailed investigation of current Aotearoa New Zealand industry re-processing capacity, including an assessment of projected growth capacity and requirements needed to encourage and promote the development and/or expansion of onshore re-processing.	To understand the potential onshore capacity (e.g., by material type) to receive and re-process scheme collected material.
Detailed investigation of the investment required to support greater onshore re-processing capacity and opportunities.	To understand the feasibility of a NZ CRS supporting and facilitating onshore re-processing of scheme material and the potential value of re-processed material for export sales. To support the principles of the pūnaha whakarōpū para - waste hierarchy.
Investigation of what policy requirements and/or guidelines may be needed to support onshore re-processors for scheme material.	To support onshore technological innovations and economic growth where possible.
Investigate and develop guidelines or requirements around highest and best resource use in line with Aotearoa New Zealand’s transition from a linear economy to ōhanga āmiomio - circular economy.	To enable scheme collected material to be re-purposed and/or recycled back into bottles and cans rather than downcycled into lower quality, non-food grade materials.
Detailed review of supply chains, including labelling process requirements and any harmonisation elements to be considered.	To understand actual costs incurred by the producer in producing country specific labels.
Investigation of the Aotearoa New Zealand hospitality sector and how this sector can actively participate in the NZ CRS.	To understand the mechanisms needed to support active participation, including, for example, contractual arrangements for the collection of containers from hospitality premises.
Investigation and analysis of any infrastructure modification requirements needed by retailers to enable collection of eligible containers (e.g., RVMs).	To understand the requirements to support voluntary return to retail and provide a customer focussed service.
Detailed assessment and feasibility study of the potential to include refillables within the NZ CRS and/or the mechanisms required to support refillables as a separate but integrated system within the NZ CRS (e.g., ability for container return facilities to also handle refillable containers).	To promote and encourage the use of refillables in Aotearoa New Zealand through the establishment of a NZ CRS. To view this through the lens of the consumer to drive both convenience and simplicity.
Detailed investigation and selection of a unique NZ CRS scheme identification label and/or barcode and/or QR code and/or other form as applicable, including the potential to incorporate Te Reo Māori and/or Māori imagery.	To create a unique Aotearoa New Zealand scheme specific image and to track registered scheme containers and to minimise scheme fraud.



New Zealand Container Return Scheme Implementation Stage – Areas for further Investigation	Reason for Inclusion
Detailed investigation of new technologies to support scheme activities (e.g., the use of blockchain technology).	To ensure the NZ CRS is actively aware of new technologies and/or innovations that support scheme activities such as tracking registered scheme containers and minimisation of scheme fraud.
Establish clear and defined categories for eligible and ineligible scheme containers, including container acceptance criteria.	To ensure definitions are consistent with other Aotearoa New Zealand laws and regulations.
Information technology (IT) investigation into an appropriate IT platform to maximise scheme accountability, maximise security, manage and track online sales and free-riding, maximise receipting transparency of scheme costs and minimise scheme fraud, and the sale of scheme collected and processed material.	To have complete transparency and visibility as they relate to the successful functioning and performance of the scheme.
Assess any barriers to the adoption of scheme specific technology, for example, lack of digital capability in the retail sector that may need to be addressed.	To identify and address any barriers during the implementation stage to facilitate active participation and engagement by retailers in the NZ CRS.
Applicability and legality of long-term material re-processor supply arrangements.	To enable the NZ CRS Managing Agency to have ownership, clarity and transparency on the full huringa mataora – life-cycle of the material to ensure scheme eligible material is used for beneficial use.
Commercial procurement contractual arrangements, including probity requirements.	To provide an opportunity, where appropriate, for the provision of scheme related services that require a particular skill set or performance capacity, for example, logistics for transportation of scheme material from container return facilities to Material Consolidation Facilities and/or end markets.
Assess options for transparency of scheme costs (e.g., deposit, scheme fee) to the consumer via mechanisms, including but not limited to, clear itemisation of costs on receipts and/or supermarket checkout point of sale (POS) system displays.	To provide the consumer with clarity regarding scheme costs, alongside scheme information (e.g., scheme website, social media platforms, scheme annual reports) to highlight the relationship between scheme and product costs.
Investigation of specific border control measures to be implemented to minimise fraudulent activities such as the importation of containers and claiming of the NZ CRS deposit amount.	To ensure all border control measures, including regulations and guidelines are addressed during the NZ CRS implementation stage.
Investigate the potential influence of the NZ CRS on retailer costs and competition.	To provide clarity on costing mechanisms and impact on the consumer.

New Zealand Container Return Scheme Implementation Stage – Areas for further Investigation	Reason for Inclusion
Regional development implications – investigation of opportunities to leverage the NZ CRS to stimulate regional economies and employment particularly in the regions with higher degrees of unemployment or low incomes.	To help stimulate new economic growth and employment opportunities in Aotearoa New Zealand post COVID-19.
Assessment of potential trade barriers.	Understanding any specific trade restrictions, free trade arrangement, trade barriers when establishing a bespoke NZ CRS legislative instrument.
Investigate the cost versus benefit of scheme compaction and potential fraud risk.	To understand the likely costs associated with compaction early in the scheme (e.g., container return facility) and what the likely fraud risks may be.
Investigate and develop packaging standards, particularly the introduction of recycled packaging standards in line with the use of recycled content in the production of containers.	To establish the process by which producers will be incentivised to use recycled material in the production of new containers.
Assess options for the implementation of an ‘eco-fee’ across all packaging, including those within the NZ CRS.	Establish incentives to help producers, where possible, transition from single-use packaging to other packaging types, including, for example, refillables and more sustainable/recyclable packaging.
Assess the commercial requirements to support the establishment of a not-for-profit Managing Agency, including for example, tax exemptions.	To assess the specific requirements for the establishment of a not-for-profit Managing Agency.
Assess the micro-payments regime in Aotearoa New Zealand, and the relatively high cost for small transactions when compared to other jurisdictions.	Determine the payments regimes that may be relevant to the NZ CRS.
Assess the likely cost and market impacts on producers if the cost of recycling were to be included in products including the cost of recycling specific materials to producers, and the impact on manufacturers, producers, retailers, and consumers.	To clearly assess the life-cycle of scheme costs.
Analysis of the differential impact of the scheme on smaller beverage producers compared to larger beverage producers.	To understand cashflow considerations.
Establish an Advanced Material Recycling Fee (AMRF) framework (e.g., decision making framework).	To provide a clear framework on how the AMRF would be applied in the NZ CRS.

New Zealand Container Return Scheme Implementation Stage – Areas for further Investigation	Reason for Inclusion
Assess opportunities (e.g., availability of end-markets, material processing capacity) for the inclusion of an expanded list of containers, including for example, bathroom, kitchen, laundry, garage, garden shed products and the appropriate timeframe for product inclusion.	To provide a clear process for the inclusion of an expanded list of eligible scheme containers.
<b>Environmental</b>	
The environmental effects of chemicals (e.g., Non-intentionally Added Substances [NIAS]) in the manufacture of new single-use beverage containers and the impacts on re-processing and end-markets.	Large amounts of plastics end up in our seas and oceans, accounting for 85% of marine litter in Europe. Plastics dramatically impact the resilience of our environments and ability to provide crucial ecosystem services. Once in the environment, plastic debris accumulates and lasts for hundreds of years. Plastics, and the toxic additives they carry, ‘bioaccumulate’ in fish and seafood, effectively building up in high concentrations in certain organisms, which then transfer into the human food chain. There is also growing concern over the health impacts caused by the leakage of harmful chemicals, such as endocrine disruptors, from plastics into food, beverages and the taiao - environment <sup>1069</sup> .
Investigate and assess the feasibility to use recycled scheme material in the production of new single-use beverage containers. Develop guidance for brands on designing for recyclability and assess applicability of international standards, for example, ISO 18604:2013 Packaging and the taiao - environment.	To encourage and promote Extended Producer Responsibility by requiring and/or incentivising container producers to use recycled scheme material in the production of new containers.
Investigate and set NZ CRS baseline and target for Greenhouse Gas (GHG) emissions mitigation.	To reduce scheme related greenhouse gas emissions and progress Aotearoa New Zealand’s obligations under the Kyoto Protocol.
Set requirements for eligible scheme containers, including tethered caps, bottle caps on or bottle caps off.	Establish criteria to provide clear and transparent information to scheme participants, particularly the consumer regarding what can and cannot be returned for a refund and in what form the containers can be returned (e.g., whole versus crushed).
Opportunities for reductions in scheme carbon footprint through uptake and promotion of electric vehicle fleets.	To reduce scheme related greenhouse gas emissions and progress Aotearoa New Zealand’s obligations under the Kyoto Protocol.

<sup>1069</sup> [https://rethinkplasticalliance.eu/wp-content/uploads/2019/10/bffp\\_rpa\\_reusable\\_solutions\\_report.pdf](https://rethinkplasticalliance.eu/wp-content/uploads/2019/10/bffp_rpa_reusable_solutions_report.pdf)

New Zealand Container Return Scheme Implementation Stage – Areas for further Investigation	Reason for Inclusion
Establish best practice design guidelines for all registered container return facilities, including health and safety, operating and environmental management principles.	To set the minimum requirements to be met by a container return facility, including, for example, construction requirements, scheme branding and messaging.
Establish NZ CRS labelling requirements including, for example, non-toxic self-adhesive labels and commercial costs.	To consider the toxicity of all materials used in the scheme including printer inks and label adhesives.
Establishment of a scheme toolkit for all scheme participants to provide clarity on, for example, roles and responsibilities, scheme messaging and branding.	To ensure all scheme participants have a clear understanding of their role and responsibilities and have access to scheme information tailored to their specific role.
Detailed analysis on Glass and Tetra pack and the risk to the scheme due to supply and or solutions.	To ensure that in establishing the scheme the material risk and costs are fully understood and NZ obtains a substantial benefit for the expected cost.
<b>Cultural</b>	
Identify options to incorporate Te Reo Māori and/or Māori imagery throughout the NZ CRS design.	To acknowledge our indigenous cultural connections and create a unique Aotearoa New Zealand scheme specific image/logo.
Development of bi-lingual and/or multi-lingual scheme communication and marketing material with a Māori Aotearoa New Zealand flavour and visual appearance.	To ensure the NZ CRS acknowledges Aotearoa New Zealand’s multi-cultural diversity and provides information in several languages to facilitate consumer scheme engagement.
Assess opportunities to establish relationships with Māori communities to facilitate scheme engagement.	To ensure the NZ CRS engages with communities by connecting with community leaders.
Consultation and engagement with Mana Whenua at a regional level.	To explore and identify opportunities that empower participation in the NZ CRS.
<b>Regulatory</b>	
Establishment of a bespoke NZ CRS legislative instrument (e.g., return rate targets, penalty regimes, number of container return facilities, definition of beverage producer, Governance Board and Managing Agency roles and responsibilities, scheme review periods including timeframes and/or triggers to include additional containers [e.g., kitchen, laundry, bathroom products]) underpinned by legal review of existing legislation and regulations (e.g., Waste Minimisation Act 2008, Resource Management Act 1991).	To ensure all legal components have been addressed and accounted for in the bespoke NZ CRS legislative instrument to support the implementation of the NZ CRS and the ultimate success of the scheme.

New Zealand Container Return Scheme Implementation Stage – Areas for further Investigation	Reason for Inclusion
Engagement with Aotearoa New Zealand markets and businesses to assess how they would engage with a NZ CRS and assess the likely impacts.	To ensure any barriers to scheme participation from a business perspective are addressed.
Assess the relationship between the NZ CRS eligible containers and impact of any established priority product guidelines.	To ensure alignment between government waste and whakahaere rauemi - resource management initiatives, including proposed kaitiakitanga whakanaonga - product stewardship schemes.
Assess opportunities for product design guidelines including the provision of tethered caps.	To encourage beverage producers to design products that take a huringa mataora - life-cycle approach.
Assess the specific planning requirements including Resource Management Act 1991 regarding the establishment of container return facilities, such as manual collection depots and RVMs.	To identify specific siting and/or land use requirements to support the establishment of the NZ CRS container return facilities.
Investigation of Council-Controlled Trading Organisation and Charitable Company Managing Agency organisational form options including a detailed evaluation.	To determine the preferred Managing Agency organisational form option for a consumer focussed NZ CRS.
Priority Product Investigation	To ensure the Priority Product guideline requirements are taken into account.
<b>Other</b>	
Detailed study undertaken on the phytotoxicity of container packaging materials and impact on human and environmental health.	The NZ CRS provides a potential mechanism to influence a shift towards containers that are more environmentally friendly and provide greater protection and safety of human health.



SECTION 18:  
THE NEW ZEALAND CONTAINER  
RETURN SCHEME DESIGN

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## Section 18 The New Zealand Container Return Scheme Design

The following conclusions provide a summary of the research presented in the preceding 17 sections culminating with the NZ CRS design components to be taken forward to the implementation stage. It is important to reiterate here that this NZ CRS design provides the foundation on which the detailed development of the NZ CRS can be taken forward to implementation whilst ensuring the scheme meets the following objectives:

1. Change the way Aotearoa New Zealand values beverage containers that will see increased hangarua - recycling and new opportunities for refilling;
2. Reduce the volume of plastics and other container litter currently ending up in our streams (i.e., awa – waterways), moana - marine environment, wāhi tūmatanui - public spaces and ruapara - landfills; and
3. Give effect to ōhanga āmiomio - circular economy outcomes and any future priority product guidelines.

Building on the NZ CRS design stage, the implementation of the scheme will continue to be guided by the following design principles:

- Make it easy and convenient to return containers across Aotearoa New Zealand;
- A solution that is cost effective and efficient;
- Improve the quality and marketability of recyclables and assess the impact of the NZ CRS design on current kerbside and other collection and processing systems; and
- Create new opportunities for employment, community participation and fund-raising for charities and social enterprises.

Additionally, the implementation stage will, where possible, give continue to give effect to the following design elements:

- Use technology and innovations to optimise performance of the NZ CRS;
- Support greater investment in remanufacturing and regional development;
- Align objectives with Te Tiriti o Waitangi - the Treaty of Waitangi and Te Ao Māori; and
- Where able mitigate climate change.

Further, while the recommended approach from stakeholders was to exclude refillables from the NZ CRS design and rather support a complimentary and/or partially integrated scheme, a key outcome of the NZ CRS design process has sought to:

*“Change the way New Zealand values beverage containers that will see increased recycling and new opportunities for refilling.”*

Therefore, establishment of a complimentary and/or integrated refillable market alongside a NZ CRS will be carried out on a case-by-case basis with consideration given to the following broad elements:

- Economic cost of setting up refillable systems;
- Engagement of retailers in refillable systems;
- Refillable infrastructure (e.g., washing facilities, collection facilities);
- Refillable packaging and incentives to encourage beverage producers to use refillable packaging;
- Marketing of refillable containers (e.g., aesthetics regarding scuffing of containers); and
- New Zealand legislation.

At this stage of the NZ CRS design process and acknowledging SDWG feedback, refillables will not be included as an eligible scheme container and therefore will not be part of the NZ CRS design. However,

the NZ CRS Managing Agency will promote and encourage the development of the refillables market through options including, but not be limited to:

1. Funding and promoting the benefit and awareness of refillables as a preferred choice to New Zealanders.
2. Working closely with existing and future New Zealand refillable schemes to identify and remove barriers to their growth, irrespective of whether existing or future refillable schemes choose to be included within a NZ CRS or not. This approach recognises and provides for individual companies to manage and promote their own unique refillable containers and where companies may wish to share a universal bottle.
3. Further to item 2, investment in, or funding of, infrastructure by addressing and removing barriers such as the return, re-washing and refilling of bottles.
4. Ensuring that the method of return by customers is convenient, accessible and where appropriate and practicable is compatible with existing NZ CRS container return facilities.
5. Establishment of NZ CRS container return facilities that, where practicable, can accept, sort and store for transportation both eligible single-use beverage containers and reusable beverage containers.
6. Support and facilitate the uptake of reusables through the integration of strategic directives embedded within the NZ CRS scheme performance indicators.
7. Securing the funding to achieve the above from the scheme fee.

Further analysis of the Aotearoa New Zealand refillable market as well as the processes and procedures needed to support either a complimentary and/or integrated scheme will be carried out during the NZ CRS implementation stage. This will ensure that both schemes provide New Zealanders with services that are complimentary, easily understood, convenient and accessible whilst supporting Aotearoa New Zealand transition from a linear economy to *ōhanga āmiomio* - circular economy building on the principles of the waste hierarchy of reduce, reuse, recycle.

## 18.1 The New Zealand Container Return Scheme Design Conclusions

The intent of this section is to present the key conclusions as reported in the preceding 17 sections all of which have been reviewed by the Scheme Design Working Group (SDWG) and Technical Advisory Group (TAG). The feedback received from the SDWG and TAG has been used to provide further clarity where required and strengthen the conclusions as presented in the research. The following conclusions have been extracted from the preceding sections and provide a high-level synthesis of the respective section research. The reader is referred to the specific section for further detailed information. Further, the following conclusions provide a foundation on which the key NZ CRS components have been developed (see Section 18.2 for further information).

The following sections present the high-level NZ CRS design research conclusions.

### 18.1.1 Scope of Containers

The outcomes of the research and feedback received from the Scheme Design Working Group (SDWG) show that there is a wide range of containers existing in the various global container return schemes and that there is variability on the inclusion of materials namely, glass, plastic, metals and liquid paperboard. Further, some schemes may include glass but may exclude specific material types such as liquid paperboard and/or products such as wine.

Taking all the above into consideration and specifically:

- Typically, global container return schemes include all single-use beverage containers comprising the broad material categories of glass, plastic, aluminium, steel and liquid paperboard (LPB) with variations of these materials accepted depending on the particular global container return

scheme conditions of acceptance criteria, availability of end-markets for the material and objectives of each respective scheme (Section 3.1);

- Eligible and ineligible single-use beverage containers are defined by several factors, including the type of container, the size, conditions of acceptance and scheme labelling (Section 3.1);
- Despite the variability across the range of international container return schemes, including the type of material accepted, most container return schemes either include all ready to drink beverages or one (1) or more of the following broad eligible and ineligible container groups (Section 3.1):
  - Carbonated and non-carbonated soft drinks
    - Including energy and sports drinks, cola, and ready to drink cordials
  - Fruit and vegetable juice
    - Including coconut juice and fruit juice
  - Alcoholic beverages
    - Including, beer, stout, ale, wine, cider and spirits
  - Carbonated and mineral water
    - Including sparkling and still water
  - Milk products
    - Including milk and drinkable yoghurts (e.g., fermented dairy products)
- Ineligible containers typically include those single-use ready to drink beverage containers greater than the respective scheme eligible container volume and specific conditions of acceptance (Section 3.1);
- Alongside single-use containers and inclusion in container return schemes, several countries also include refillable containers under either a voluntary or compulsory refillable deposit requirement (Section 3);
- Noting that most eligible containers included in global schemes include containers up to 5L with some schemes accepting containers up to 20L (Section 3.2);
- Across the range of international container return schemes, specific conditions of acceptance (e.g., size, type, material) are implemented via legislation to manage the containers eligible as part of the respective scheme (Section 3.3);
- Where global container return schemes encounter cross-boundary issues, the application of barcodes and/or other unique scheme labels has been implemented to reduce these cross-boundary issues (Section 3.3);
- Barcodes as well as the specific scheme refund marking provides a means of identifying and verifying eligible containers whilst also providing a means to, for example, minimise fraud and verify data (Section 3.3);
- Transition period requirements (e.g., eligible container labelling) are commonly put in place to assist producers, manufacturers and retailers to become compliant with scheme requirements (Section 3.3);
- Glass single-use beverage containers including wine bottles, beer bottles and soft-drink bottles are commonly included across a range of global schemes (Section 3.4);
- The inclusion of wine and spirit containers across the international container return schemes is varied with many schemes excluding wine or spirits contained in glass containers but including wine and spirits contained in other material types such as cardboard casks, plastic sachets, foil pouches or aluminium cans (Section 3.4);
- The current New Zealand voluntary glass kaitiakitanga whakanaonga - product stewardship scheme including the geographical service coverage across Aotearoa New Zealand and overall cost of service, and recovery;
- The Cost Benefit Analysis undertaken for this project (with and without a range of material types including, for example, glass containers);

- The primary focus of the NZ CRS design process is single-use beverage containers, regardless of material type; and
- Eligible containers to have specific conditions of acceptance (including a barcode, QR code, or other form of unique identification).

there appears to be no basis at this stage to exclude any single-use beverage containers from the New Zealand scheme.

Whilst some of the end materials appear to struggle to find beneficial end-uses, just because something is not recyclable, is not a reason to exclude it from the scheme as that would commercially advantage these types of materials and products over products that can be more effectively recycled. Currently, a range of single-use beverage containers do not have a sustainable end-market solution (e.g., liquid paperboard) and/or are currently being disposed of to landfill. As discussed in earlier sections, the recovery, beneficial use and associated cost of achieving *ōhanga āmiomio* - circular economy for different materials should be put back to the producer who would then incorporate this into the cost of the product(s). As such, the NZ CRS Project Team has consulted with the SDWG and other stakeholders (including central government departments) during the NZ CRS co-design process regarding the inclusion of an Advanced Material Recycling Fee (AMRF). The AMRF fee recognises that not all container packaging materials are equal with some more recyclable and valuable than others. In practice this means that materials that are difficult to recycle or problematic such as liquid paperboard may need to incur additional cost to see them successfully recycled in keeping with the outcomes of the NZ CRS design while other materials may receive a net income such as aluminium. Approaching this in an open and transparent way will ensure container material choices by beverage producers are recognised and reflects any net cost or revenue that is expected to ultimately be passed on to the customer. Also, in keeping with the outcomes of the NZ CRS design, the non-financial impacts associated with container material choice must be factored in or at the very least provided for to help shape the direction and choice of container material in the future. The AMRF provides the mechanism to achieve this. The NZ CRS Managing Agency will be responsible for the timing of when materials will be included in the NZ CRS, including the associated value of the AMRF for each material or product type.

It is also noted that other global schemes are, and have been, considering the expansion of the respective container return scheme to include other containers such as kitchen and laundry products. Acknowledging the focus of the NZ CRS design is to include single-use beverage containers, the design has not precluded these types of containers from being included in the scheme in the future.

### 18.1.2 Container Return Facilities

Broadly, the outcomes of the research and feedback received from the SDWG show that a wide range of manual and automated container collection methodologies are employed throughout global container return schemes and that these provide differing container return rates, varying employment opportunities and different levels of customer convenience. Similarly, the research shows that a customer's awareness of, and engagement in, a container return scheme is influenced by, for example, the number, type and location of container return facilities.

Generally, container return schemes associated with a high container return rate are those that include a return-to-retail facility where the retailer provides a convenient location for customers to return eligible containers (e.g., carpark located RVM, instore RVM) whilst also supporting customer engagement opportunities (e.g., retailer marketing opportunities).

Broadly, those schemes employing a combination of manual and automated container return facilities, have shown high container return rates coupled with a higher rate of employment opportunities, customer convenience and a wider range of options for customers to redeem the refund amount (including cash, voucher, electronic funds transfer, donation). Further, it is important to note that the maturity (i.e., years of operation) of a container return scheme, as well as several other factors

(e.g., location of return facilities and consumer understanding of the scheme) will positively influence container return rates. Taking all the above into consideration and specifically:

- Efficient global container return schemes employ a range of manual (e.g., manual depot) and automated container return facilities (e.g., Reverse Vending Machine) methodologies;
- Customer focussed and convenient container return schemes, include a range of refund options including cash, electronic funds transfer, supermarket voucher, donation or scheme credits (e.g., loyalty card, gift card);
- Customer convenience and accessibility (e.g., opening times, proximity to convenience locations) are key aspects when determining location and number of collection facilities, acknowledging that the cost of a customer centric service may be greater than a commercially orientated service; and
- Container return schemes typically associated with high return rates, includes a mandatory return-to-retail option versus a voluntary approach.

the NZ CRS will provide a range of container return facility options.

Based on learnings from overseas, feedback from the design process and the outputs from financial modelling it is proposed that the NZ CRS initially establish approximately 415 (i.e., a projected population of 5.213million as at 2023 and a ratio of 12,500 people per container return facility) registered container return facilities across Aotearoa New Zealand noting that each of the approximately 415 registered sites are anticipated to have informal drop-off points located to increase customer convenience and provide additional volumes of containers to improve financial viability. The NZ CRS Managing Agency will be required to monitor the performance of each geographical area such as containers returned as a proportion of what is available in the area and take appropriate action as required. This action would include working with container return facilities, establishing more return sites and increasing awareness. It is further recommended that no later than 9-months before the scheme commences a final review is undertaken by the regulatory authority to confirm if the establishment of a minimum of approximately 415 container return facilities is still appropriate or should be increased based on any new information available at the time.

Acknowledging the feedback received from the SDWG and there being no global precedence of a voluntary return-to-retail underpinned by a mandatory approach, the Project Team, on balance, considers the NZ CRS return-to-retail option to include a voluntary approach only. Under a voluntary approach it will be a requirement of the Managing Agency to negotiate arrangements with retailers to host a container return facility represents a win-win outcome. Further, the establishment of the range and network of container return facilities will need to consider factors, including but not limited to, Aotearoa New Zealand's existing infrastructure and population densities (e.g., rural, urban) to ensure consumers are provided with a cost efficient and convenient NZ CRS.

Further, the arrangements associated with the transportation of collected containers to a scheme Material Consolidation Facility, Material Re-Processor and/or direct to end-markets differs across the global container return schemes depending on the material ownership, sale of products and associated revenue arrangements. Across all global schemes, container verification and fraud prevention measures are key components in managing the sale and transportation of materials as is the redistribution and/or reinvestment of revenue generated from the sale of material.

### 18.1.3 The Retailer

The outcomes of the research and feedback received from the SDWG show that retailers have an important role in the implementation and ongoing development of global container return schemes by providing the consumer with both the point of access for the sale of eligible containers and at times for the provision of container return facilities (e.g., return to retail, carpark RVMs). In this regard, retailers along with other scheme participants (e.g., producers, consumers, importers, manufacturers) have a

significant role to play in kaitiakitanga whakanaonga - product stewardship by helping to develop greater focus on waste and environmental sustainability through design, production and consumption decisions.

As retailers provide the direct engagement points at which a customer purchases eligible containers, and in the case of a return-to-retail option, returns containers for the appropriate deposit refund, established and coordinated communication with the Managing Agency is required to ensure customer engagement is accurate, informed and consistent. Additionally, across the global container return schemes the Managing Agency and retailers have typically established a transitional period to allow retailers time to make the appropriate changes to product lines, and/or, change over in product pricing, prior to the end of the transitional period.

Retailers participating in existing container return schemes have generally noted manual collection and associated manual cash refunds as an inconvenient form of payment. Retailers would prefer to incorporate appropriately sized RVMs into the store front and/or entrance way to provide their customers with a convenient way to return eligible containers whilst undertaking their shopping.

The following conclusions are also drawn from the research:

- Increased container costs are ultimately passed on to retailers from the beverage suppliers. Retailers then pass the increased costs to consumers by adding it to the total cost of the beverages (Section 5);
- Container return schemes that have a return-to-retail obligation tend to have higher container redemption rates (Section 5);
- The impact that container return schemes have on the retail industry appears to be primarily positive due to increased foot traffic (Section 5.1.1). This benefit also drives competitor activity between retailers to host return facilities;
- Retailers operating with a mandatory return-to-retail system are reported to be very satisfied with the system as it has provided additional convenience to their customers and consequently ensured return traffic to their stores (Section 5.1.1);
- RVMs (in comparison to manual collections) are perceived by retailers as a benefit to their sales as they provide refunds in the form of vouchers or cash and encourage customers to enter the retail store and purchase new goods (Section 5.1.2);
- Negative perceptions of manual collections were reported to be related to the slowing down of customer service for shoppers (Section 5.1.2);
- In New South Wales that retailers were reportedly reluctant to dramatically increase the prices of their products to reflect the cost of the container return scheme in case it led to a change in customer purchasing habits, affecting not only the sales of beverages covered by the scheme, but also other products purchased at the store at the same time (Section 5.1.3);
- In Queensland, it was found that the price increases for alcoholic and non-alcoholic beverages were similar for small and large retailers and similar for Brisbane and regional Queensland (Section 5.1.3);
- The costs incurred on retailers due to the operation of the schemes differed based on the designs of the schemes (Section 5.1.4);
- In Europe, costs on retailers are often subsidised thorough financial support from government or the Managing Agency. In Denmark, financial support in the form of a handling allowance or subsidy is provided (Section 5.1.4);
- As part of the schemes, retailers are often required to allocate valuable space for the collection of empty containers. Building work may also at times be required to attach equipment to the store walls and to alter areas around the shop such as the entrance or other designated areas for the RVMs or collection areas (Section 5.1.6);

- As the point of access for the purchase of containers, retailers have a large role to play in providing scheme awareness to the general public, and hence are required to understand the scheme themselves. It is important that retailers can provide the correct information to consumers when asked about the scheme (e.g. Te Reo Māori, multi-lingual options) (Section 5.2);
- Hospitality businesses are also important participants in container return schemes as they can either sell eligible scheme containers (e.g., eligible beverages) to consumers for either onsite or offsite consumption (Section 5.3); and
- Most official websites of schemes, managing agencies, or of the relevant government departments will either have online information that's relevant to retailers, or will provide the contact details that retailers can use for information on the scheme (Section 5.4).

#### 18.1.4 The Consumer

The outcomes of the research and feedback received from the SDWG show that while all consumers automatically participate in a container return scheme as purchasers of single-use beverage products, the returning of eligible scheme containers and refunding of deposits is dependent on several key factors:

- Incentive provided to drive behaviour change and make it worthwhile– deposit value;
- Consumer convenience and accessibility (Section 6.1.2);
- Community engagement and employment opportunities (Section 6.1.3); and
- Scheme communication and engagement with consumers (Section 6.2).

In addition to direct scheme engagement, the benefits provided by a container return scheme to consumers has wider reach including community pride through the reduction of litter and an increase in employment opportunities including community groups.

Further, the results of the ConsumerNZ surveys gauging New Zealanders views on recycling, support for a container return scheme and transparency of scheme costs, found that a NZ CRS design that provided for convenient drop-off facilities (e.g., supermarkets and collection depots), provision of clear scheme information, inclusion of a wide range of beverage container material types (i.e., plastic, glass, metal), a range of options to receive the deposit (e.g., cash, direct to bank account, voucher and donation) and a deposit amount that was high enough to encourage consumer participation in the scheme (i.e., up to NZD20-cents) were the most important factors to support the success of a NZ CRS. Additionally, the survey results indicated significant consumer support for scheme costs to be transparent to the consumer through, for example, itemisation of scheme costs on shopping receipts (Section 6.6).

The following conclusions are also drawn from the research:

- As the receivers of the deposit refunds from eligible containers, consumers can experience economic benefits (Section 6);
- Benefits experienced by a local community are related both to the increase in income, increase in employment and reduction in litter (Section 6);
- Working towards a high return rate of containers inherently benefits consumers by ensuring that they are encouraged to return their containers (Section 6.1.1);
- Convenience, as part of the consumer experience, is key to the engagement of consumers and to ensuring that costs on consumers are minimised (Section 6.1.2);
- A benefit of container return schemes is that they have provided an additional income source to consumers (Section 6.1.3);
- If the proposed deposit refund amounts for eligible containers are too low, consumers may not be incentivised enough to return their containers - the incentive increases with increasing deposit refund value (Section 6.1.3);

- It is important to ensure that consumers have an understanding of the scheme, its kaupapa - purpose, its benefits to them, and where and how they can return their containers. A consumer education campaign should be considered to ensure that consumers understand the changes (Section 6.2);
- Communication of information should also meet a variety of accessibility needs including language translations (in Aotearoa, Te Reo Māori) and cultural considerations (Section 6.2);
- The roles and responsibilities of consumers are often communicated to consumers in the scheme awareness campaigns such as online resources, education materials and advertisements (Section 6.4);
- The responsibility of managing consumer questions and complaints is typically undertaken by the Managing Agency, or on the government department responsible for overlooking the scheme (Section 6.5);
- Of New Zealand consumers surveyed between February and March 2020 (Section 6.6):
  - 78% were in favour of a NZ CRS with 72% reporting that they were very likely to use the NZ CRS.
  - 79% reported convenient drop-off points (i.e., container return facilities) and 67% reporting the need for easy to understand information regarding what containers the NZ CRS covers.
  - 64% noted that all containers made of plastic, glass and metal should be included in the NZ CRS.
  - 70% noted that supermarkets would provide the most convenient place to return scheme eligible containers followed by 63% at collection depots (e.g., community recycling centres and recycling facilities), 40% to other retail outlets (e.g., bottles stores and dairies).
  - 58% (more than half of respondents) considered a deposit amount up to NZD20-cents would be sufficient.
  - 40% of respondents supporting cash, 21% direct payment to a bank account, 16% voucher, 6% charity and the remaining 17% reporting other methods.
  - 69% believed it was somewhat important or very important for the refundable deposit fee to be shown on shopping receipts and 62% believed it was somewhat important or very important for the non-refundable scheme fee to also be shown on shopping receipts.

Consequently, the success of a bespoke NZ CRS design will be underpinned by ensuring the scheme is designed to actively engage consumers (i.e., a deposit value that incentivises consumers to engage in the scheme) whilst ensuring that convenience and accessibility are key design foundations.

### 18.1.5 Material Processing Facilities

The outcomes of the research and feedback received from the SDWG show that eligible scheme containers can be returned by the consumer via several pathways which are associated with different material processing facilities. Briefly, eligible scheme containers are commonly received for processing at either a centralised and dedicated scheme Material Consolidation Facility (MCF), at an existing Material Recovery Facility (MRF) processing kerbside and commercial recyclables, or recovered from kerbside general refuse collections (e.g., waste transfer stations). The differences between these facilities are based on several predominant pathways by which eligible scheme containers are returned and recycled by the consumer (Section 7):

#### 1. Material Consolidation Facility (MCF) Pathway

- Consumer returns eligible scheme material to a container return facility for the appropriate refund. Scheme material is sorted, verified and processed by one or more centralised scheme Material Consolidation Facility (MCF).



## 2. Material Recovery Facility (MRF) Pathway

- Consumer disposes eligible scheme material into the kerbside recycling service and does not receive a refund. Scheme material is sorted, verified and processed by an existing Material Recovery Facility (MRF).

## 3. General Refuse Processing Facility Pathway

- Consumer disposes eligible scheme material into the kerbside refuse service and does not receive a refund. Scheme material is commonly disposed of to landfill unless processes and procedures are in place to recover scheme eligible material.

## 4. Disposal to the Environment Pathway

- Consumer disposes eligible scheme material to the environment (i.e., litter) and does not receive the refund.

However, across the global container return schemes, the Material Consolidation Facility (MCF) commonly provides the centralised point at which eligible scheme containers are received, verified, sorted and baled ready for delivery direct to end-markets or direct to material re-processors. Similarly, existing Material Recovery Facility (MRF) infrastructure has been incorporated into container return scheme designs by providing a mechanism by which consumers who have disposed of eligible scheme material in kerbside recycling without redeeming the appropriate refund are collected, counted and processed. Where the MRF receives and processes eligible scheme material, a contractual revenue sharing arrangement is commonly established between the MRF and the local council, with the revenue shared acknowledging the contribution and services provided by the respective provider. Further, the method implemented to verify eligible containers is either via direct count or using a weight-based approach, although many global schemes employ a direct count verification method. Where eligible containers are recovered from the general refuse, these containers must meet the scheme eligibility criteria in order to be eligible for a deposit refund (i.e., clean, visible and legible scheme barcode and/or logo).

Taking all the above into consideration and specifically:

- Scheme design to determine the number of sorts required for processing eligible containers and consequently the alignment required between the scheme material processing facilities (i.e., MCF, MRF, general refuse processing facilities) and the container return facilities (e.g., manual collection depots) (Section 7);
- The ability of a scheme material processing facilities (i.e., MCF, MRF, general refuse processing facilities) to undertake automated actual counts is determined by the container count method (e.g., barcode scanning, shape verification) which in turn determines the form eligible containers are received (e.g., 'whole' containers with scheme ID intact [e.g., barcode, logo]) (Section 7.1);
- Arrangements put in place to manage eligible scheme containers collected via local council kerbside recycling collections (i.e., MRF) and eligible containers entering the general refuse via waste transfer stations (Section 7.1);
- Options for compaction of material at the container return facilities (e.g., manual collection depots such as resource recovery centres) to reduce depot footprints and reduce transportation costs aligned with the scheme MCF container counting and verification methodology and Managing Agency audit and fraud minimisation requirements (Section 7.1);
- Processes established to audit scheme eligible glass container return rates collected via kerbside recycling collections to support appropriate MRF glass material handling fee claims (Section 7.1.1.2);
- Contingency infrastructure and/or arrangements put in place to ensure scheme material processing facilities (i.e., MCF, MRF) can continue processing eligible scheme containers in the event of capacity issues and/or infrastructure down-time (Section 7.1.1.3);

- Accurate data verification and transparency of data with arrangements in place between the container return facility, scheme material processing facilities (i.e., MCF, MRF, general refuse processing facilities) and Managing Agency to ensure accurate and traceable data (Section 7.6);
- Where the scheme MCF is not part of the Managing Agency, clear contractual arrangements between the Managing Agency and the MCF including ability for the Managing Agency to undertake random audits of MCF activities to ensure they meet contractual obligations (Section 7.3);
- Clear communication and expectations of scheme material processing facilities (i.e., MCF, MRF, general refuse processing facilities) roles and responsibilities managed by central government and the Managing Agency (Section 7.3);
- Most official websites of schemes, Managing Agencies, or of the relevant government departments will have online information that is relevant to scheme material processing facilities (Section 7.4);
- The Managing Agency commonly establishes dispute resolution processes and procedures to enable scheme material processing facilities to raise issues and have disputes addressed (Section 7.4);
- Transportation of scheme materials from the material processing facility (i.e., Material Consolidation Facility [MCF], Material Recovery Facility [MRF] or General Refuse Processing Facility [waste transfer stations]) is dependent on the degree of sorting, processing and baling undertaken by the respective facility (Section 7.5);
- In the case of the Material Consolidation Facility (MCF), eligible scheme containers are received from container return facilities typically sorted into the number of categories as specified by the respective scheme (e.g., colour graded PET and glass, HDPE, LPB) or simply received as comingled containers for further sorting and verification (Section 7.5);
- In the case of a Material Recovery Facility (MRF), eligible scheme containers are received via kerbside recycling collections whereby the consumer has forfeited the opportunity to redeem the deposit refund (Section 7.5);
- Transportation of collected eligible containers from the container return facility to the MCF and onwards (e.g., re-processor) presents a challenge as they are bulky and lightweight and commonly require significant compaction to improve transport (and storage [e.g., RVMs compacting containers for space efficiencies]) efficiency (Section 7.5);
- Scheme objectives, including the reduction in scheme transport related greenhouse gas emissions, incentivises the scheme Managing Agency to robustly assess and implement mechanisms to give effect to this objective (Section 7.5);
- Several schemes have integrated maximising loads of materials achieved through balancing baling and compaction at container return facilities with fraud control measures, through to utilising third party back-haul arrangements for transportation of materials from the material processing facility to the re-processor and continually investigating options for improved transport efficiency (Section 7.5);
- Whilst the majority of scheme materials (e.g., PET, HDPE, LPB) are processed (i.e., collected, sorted, verified, baled/compacted) prior to being transported to the re-processor, other materials such as glass are transported directly to, for example, a glass beneficiation facility (Section 7.5);
- Where compaction is approved by the Managing Agency, this activity should occur at or as close to the point of collection as possible to achieve transport efficiencies and only occur after the containers have been verified and counted (Section 7.5);
- Material processing facility financial accountability systems and processes are critical components in the design of a container return scheme as these provide the foundation on which the Managing Agency can, for example track, and audit the quantity of eligible containers

returned (i.e., container return rates) and value of deposits repaid to consumers (Section 7.6); and

- The financial accountability systems and processes are interlinked and often interdependent with broader design components supporting the ultimate success of a scheme (Section 7.6).

the scheme MCF is to be incorporated into a NZ CRS design as an integral component responsible for the central repository and on-ward transportation hub to end-markets and/or material re-processors.

Whilst the role and responsibility arrangement of the Material Processing Facilities within a scheme differs across many global container return schemes, fundamentally, the scheme MCF will provide the central point at which scheme collected eligible scheme containers are counted, verified, sorted and baled ready for transport to material re-processors and/or direct to end-markets. The exception to this is glass which will ordinarily be transported direct to the Material Re-Processor.

### 18.1.6 The Material Re-Processor

The outcomes of the research and feedback received from the SDWG show that material re-processors provide a key service to a container return scheme by providing end-markets for the collected scheme eligible material. Consequently, the material re-processor may also require from either the Managing Agency or MCF contractual conditions of acceptance for material which may include factors such as contamination levels. Therefore, the relationship of the material re-processor is also inter-linked with the design of the scheme and may also influence how scheme eligible material is collected and sorted so as to meet re-processor requirements (captured in the contractual obligations between the parties) and to ensure the highest quality material is available to the commodity markets.

The following conclusions are also drawn from the research:

- where the Managing Agency is involved in the fate of scheme material:
  - material re-processors may be procured through a competitive tendering process ensuring eligible scheme material is recycled (Section 8.2);
  - the Managing Agency has greater ability to track and control the end fate of the eligible scheme material with contracted material re-processors (Section 8.2 and Section 8.3);
  - the material re-processor must generally meet strict criteria and material specifications (e.g., quality of recycled PET flakes, quality of recycled aluminium) and impose this requirement upon the MCF/Managing Agency (Section 8.1 and Section 8.2);
  - the Managing Agency may undertake an assessment of the material re-processors recycling performance, including an assessment of the organisation's certifications and authorisations (Section 8.2);
  - the Managing Agency may undertake regular inspections of the material re-processor ensuring that little material collected through the scheme is wasted (Section 8.2); and
  - the Managing Agency may utilise back-haul transportation relationships where possible to reduce the carbon dioxide emissions from transporting scheme beverage containers from the MCF to manufacturers, for example, glass (Section 8.4).
- where the Managing Agency is not involved in the fate of scheme material:
  - the material re-processor sells the product to commodity markets and the Managing Agency generally has limited ability to control the end fate of the scheme material (i.e., ensuring the material is recycled) (Section 8.2 and Section 8.3); and
  - the Managing Agency may have limited visibility on the end fate of the collected scheme material (Section 8.2 and Section 8.3).

Therefore, as with a MCF, the role of the material re-processor in the NZ CRS will be subject to the contractual arrangements reached between the scheme Managing Agency to ensure a closed loop material cycle and *ōhanga āmiomio* - circular economy principles are achieved. For clarity, contractual

arrangements between MCF's and the Managing Agency are separate from revenue sharing arrangements between local councils and their MRF operators.

### 18.1.7 The Container Manufacturer

The outcomes of the research and feedback received from the SDWG show that container manufacturers are responsible primarily for supplying eligible empty packaging to beverage producers and for supporting the closed loop of the scheme by incorporating post-consumer recycled materials in their manufacturing, where possible. This is usually the contract responsibility of beverage producers who would pass on that requirement to their container manufacturers. The role of container manufacturers can sometimes be also fulfilled by the beverage producers. Each scheme refers to container manufacturers and beverage producers differently, often identifying them as manufacturers, suppliers, brand owners or bottlers. Further, container manufacturers will have a vital role in the effective establishment and ongoing success of the NZ CRS.

The following conclusions are also drawn from the research:

- Container manufacturers are impacted by the manufacturing changes that their beverage producers might request in order to be compliant with the scheme, such as removal of ring-pull lids (Section 9.2);
- Container manufacturers are not responsible for scheme liability. This is usually the responsibility of beverage producers; A beneficial outcome of schemes is that they generate a local stream of clean recycled materials for container manufacturers to use in their new containers, enabling onshore ōhanga āmiomio - circular economy outcomes (Section 9.1);
- Less energy is required to turn collected containers into materials that can be used in the manufacturing of new containers. This leads to a decrease in manufacturing emissions into Papatūānuku such as air and water emissions (Section 9.1);
- A transition period may assist container manufacturers to make the necessary change to containers in order to comply with specific regulations (Section 9.2);
- Some container return schemes influence the container manufacturer to use recycled scheme material in the production of new containers thereby contributing towards a 'can to can' or 'bottle to bottle' future (Section 9.2);
- Container return schemes have been reported to contribute to a change in the market share of refillable packaging (Section 9.2);
- Purchasing feedstock cost and logistical savings were reported in Sweden as container manufacturers were provided with a continuous stream of materials to produce new containers (Section 9.2);
- While container manufacturers may be required to manufacture containers that are compliant with new regulations for their beverage clients, they do not have responsibility to raise awareness of the scheme (Section 9.3);
- Container manufacturers are commonly liable for funding a container return scheme if manufacturers are also the beverage producer and are identified as the party responsible for first supplying the eligible scheme container to the market (Section 9.4); and
- In many schemes, eligible scheme containers are registered by the beverage producer and approved by the scheme Managing Agency or regulator before being sold in the market. As such, the beverage producer commonly communicates relevant scheme requirements to the container manufacturer (Section 9.5).

Consequently, while the role of the container manufacturer in the NZ CRS will be small compared to the beverage producer who holds most of the responsibility for ensuring eligible containers are compliant, the role of the container manufacturer may include the requirement of the scheme to use eligible

material in the production of new containers. Therefore, the design of the NZ CRS will determine the degree to which the container manufacturer is directly impacted by the scheme.

### 18.1.8 The Beverage Producer

The outcomes of the research and feedback received from the SDWG show that beverage producers are generally responsible for funding container return schemes with many beverage producers also fulfilling the role of container manufacturer. In addition, they are responsible for ensuring that eligible containers are supplied to the market, ensuring that eligible containers are clearly marked and identified as part of the scheme, and paying for the costs related to the supply of eligible containers as part of the scheme.

Beverage producers typically face the financial responsibility of funding container return schemes and may also be required to pay an additional material recycling fee on products that are not readily recycled. However, it is acknowledged that some or all of these costs may be passed through to the consumer at the point of sale. Similarly, in addition to funding the scheme, the beverage producer may also be responsible for managing and operating the scheme which may either require a deposit to be paid on all eligible containers regardless whether the containers are returned or not, or a deposit paid only on those eligible containers returned. Where the beverage producer manages and operates the container return scheme, the way in which this is achieved differs depending on which scheme model is implemented.

The following conclusions are also drawn from the research:

- Clear conditions of acceptance to be established for beverage producers (Section 10.1);
- Container labelling to be legislated and to include requirements such as a scheme logo, barcode and the deposit/refund amount (Section 10.1);
- Beverage producers to register containers with the scheme in order to sell products (Section 10.1);
- Beverage producers are commonly required to ensure that their containers are approved by the scheme Managing Agency or the regulator before being able to supply them to the market (Section 10.1);
- There was evidence found in Sweden to suggest that some beverage producers were changing their product material from PET to other plastics to avoid paying scheme costs (Section 10.1);
- Cost implications on beverage producers vary greatly depending on the different scheme designs. In general, beverage producers are commercially impacted as schemes require them to change their container designs, including labelling (Section 10.2);
- Beverage producers usually pay for the initial set-up fee, an annual fee, and a deposit for each container put on the market (Section 10.2);
- Depending on the scheme design, beverage producers may be required to pay for specific scheme components such as labelling, deposit fee and administration fees (Section 10.2);
- Beverage producers generally pay the deposit fee per container (including other scheme costs including administration fees and scheme joining fees) to the Managing Agency with funds used to finance the scheme (Section 10.2);
- The implementation of regulatory incentives may be required to ensure beverage producers supply beverages in sustainable packaging and/or in packaging that is readily recycled (Section 10.2);
- Beverage producers can be required to undertake modifications to their factories, systems and operations when changes are mandated schemes. A transition period helps to ensure that producers are given enough time to make the necessary changes to their containers to comply with regulations (Section 10.2);
- The availability of a consistent supply of material via container return schemes may support container and beverage producers to increase the use of recycled feedstock in the production of

new containers and support government ōhanga āmiomio - circular economy initiatives (Section 10.2);

- A transition period may assist beverage producers to make the necessary change to containers in order to comply with specific regulations (Section 10.2);
- Container return schemes may create commercial tensions between beverage producers particularly where discrepancies between specific eligible and ineligible beverage types were included, for example if glass was not included in the scheme but other materials are (Section 10.2);
- The Managing Agency may specify regulations for the beverage producer to meet to ensure manufactured containers are compliant with the scheme (Section 10.3);
- A key issue generally faced by beverage producers during scheme initiation is the logistical requirement to ensure contracts and organisational management is in place (Section 10.2);
- Schemes where beverage producers sell eligible containers outside of the state/territory/country are generally eligible for a refund of scheme deposits with appropriate measures in place to manage over-claiming (Section 10.2);
- Some global schemes offer interest free loans to the scheme in the design and initiation stages to keep costs down for producers and consumers (Section 10.2);
- Where unredeemed/unclaimed deposits were generated due to the scheme design, specific scheme and/or legislated requirements were established to manage the funds (Section 10.2);
- Across many container return schemes, the Managing Agency provide beverage producers with information and tools to ensure clarity of roles and responsibilities, including registration of containers (Section 10.4);
- If identified as a first supplier (i.e., New South Wales container return scheme), a producer has a legal obligation to participate and fund the scheme (Section 10.4);
- Generally, it is the legal obligation of the scheme Managing Agency to ensure that first suppliers are registered and compliant (Section 10.4);
- Most global container return schemes require producers to ensure that eligible scheme containers contain, for example, the scheme refund marking, barcode requirements and any other specific scheme requirement (Section 10.4);
- In most global container return schemes, beverage producers are responsible for funding the scheme and are usually managed and regulated by the scheme Managing Agency. This helps ensure that producers remain accountable and compliant and that support (e.g., scheme website portals, scheme information, contact phone numbers) is provided where necessary (Section 10.5)

As a result, the beverage producer is a key participant in the NZ CRS whilst supporting broader ōhanga āmiomio - circular economy principles and encouraging, where possible, a closed loop material system. Therefore, the design of the NZ CRS will determine which beverage producers will financially pay for scheme in proportion to the number and type of container materials sold to consumers.

### 18.1.9 Scheme Financials

The outcomes of the research and feedback received from the SDWG show that the financial arrangement of a scheme is dependent on the design and application of the deposit on the beverage producers; specifically whether the beverage producer pays a deposit on all eligible containers sold to the market regardless of whether these containers are returned or not (i.e., deposit model), or required to only pay a deposit at an amount determined by the proportion of eligible containers that are returned (i.e., refund model). Similarly, the research indicates that the financial design of a scheme also influences the operation of a scheme including return rates, the ability for the scheme to have sufficient funds to invest into community and/or environmental initiatives and consumer engagement, depending on the objectives and success measures of the scheme.

Looking at the scheme model design in more detail, a deposit model is based on the beverage producer paying the relevant deposit to the agency responsible for the scheme operation (e.g., Managing Agency) on each container sold to market, regardless of whether the consumer returns the container or not for a refund. Under a deposit model, the Managing Agency retains any unredeemed/unclaimed deposits, interest accrued on deposit funds and revenue from the sale of scheme material to help fund the scheme which helps to reduce any final administrative costs charged to the beverage producer.

In comparison, a refund model is based on the beverage producer paying the relevant deposit to the agency responsible for the scheme operation (e.g., Managing Agency) on each container sold to market. However, under a refund model the beverage producer only pays in proportion to the actual number of containers returned, with no unredeemed/unclaimed deposits available to the scheme Managing Agency to reduce scheme costs. This means if only 50% of the containers are returned the beverage producer will only need to pay 50% of the deposit amount and associated scheme fees for each container placed into the market. Consequently, the scheme cost to beverage producers is lower if the return rate for eligible containers is also low. However, it is also acknowledged that while a refund model provides the consumer with a scheme that is more cost effective and efficient than the deposit model, this type of model must be linked to strong scheme Governance and central government oversight vs a beverage producer controlled or dominated Managing Agency. This is to address the concerns associated with the beverage producer not being put in a position where it could limit the full potential of the scheme performance (such as an aspirational target of 95%) owing to commercial conflict where the more successful the scheme is the greater the cost it will be to the beverage sector and their customers. Further, if however, it was decided by the Government of the day that the NZ CRS be controlled and managed by the beverage industry, it is then recommended that a deposit model is adopted. This is to ensure that the beverage industry are held accountable to ensuring container return rates meet and where possible exceed scheme targets as set in the bespoke NZ CRS legislative instrument.

The following conclusions are also drawn from the research:

- The role of Government in the design and implementation of container return schemes is determined by country specific legislation and drivers to maximise performance (Section 11.1);
- There is growing awareness and recognition in Aotearoa New Zealand that the economy must transition from a linear to a circular (make-use-return) economy - *ōhanga āmiomio* with the New Zealand Government having established and enacted several key legislative documents that set the requirements for waste minimisation and management in addition to ratified several international agreements to manage New Zealand's impact on the global waste sector. This is reinforced by Te Ao Māori, reflected in Tiriti o Waitangi principles, which similarly promotes responsible stewardship of the whenua, including valuing resources, and thereby respecting the mauri of Papatūānuku (Section 11.1);
- Under a mandatory NZ CRS, the New Zealand Government would require oversight of the development of the system, as well as the means to monitor and enforce compliance. This degree of government oversight has been seen in well performing global container schemes;
- In most global countries with a container return scheme in place, the value of the deposit varies depending on the type and/or size of the container and consumer engagement (Section 11.1);
- Broadly, the majority of well performing European countries employing a container return scheme (i.e., return rates of >85%), have set a deposit value of the equivalent NZD of approximately 30-cents per eligible container with the recently commissioned Scottish scheme setting a deposit value of approximately NZD40-cents per eligible container (Section 11.2);
- The Australian State/Territory schemes have a consistent deposit level of AUD10-cents per eligible container which is lower than several global container return schemes. It is also worth noting here that the South Australian scheme when originally implemented in 1977 had a

- deposit level of AUD5-cents but increased this to AUD10-cents several years ago and has been used by all Australian schemes as the base deposit level (Section 11.2);
- A flat rate deposit such as seen in Australian schemes and other global schemes provides equal incentive to return all containers, ensures that the system is fair to all producers, and is simpler to administer (Section 11.2);
  - In addition to the type and size of a container and consumer engagement, many other inter-related factors (e.g., consumer behaviour, access to collection facilities, scheme education and engagement including awareness of the scheme kaupapa - purpose) exert their own influence on how effective (i.e., return rate) the scheme is (Section 11.2);
  - The value of the deposit and any associated scheme related fees is also influenced by the design of the scheme, including whether the responsibility of paying for the scheme sits with the beverage producer or with the consumer. Variations of these occur across the global container return schemes however those schemes designed and reviewed with strong kaitiakitanga whakanaonga - product stewardship principles in mind generally require the beverage producer to pay for scheme costs with the consumer generally remaining in a cost neutral position (Section 11.2);
  - The selection and implementation of scheme container return facilities will influence the type and number of options available to a consumer in order to receive the appropriate eligible container refund. Schemes that employ manual collection facilities (e.g. depots, over-the-counter, container bag-drop or mobile/pop-up facilities) will typically provide refunds in cash or via an electronic funds transfer. Where automated collection facilities are used within a scheme (e.g., Reverse Vending Machine as a stand along unit or integrated within a return-to-retail model) customers are commonly provided with a range of options to receive the container refund, including vouchers which can be redeemed at supermarkets for cash or a discount on their shopping bill, direct funds credit (e.g., PayPal) to a nominated bank account, or donation to a charity (Section 11.2);
  - Where a consumer elects not to receive a refund on their eligible scheme containers, they may wish to donate their containers to a charity, school or local community group after which the receiver takes ownership of the refund and the original consumer forgoes the refund. In this case, the community group, school or charity can then elect to receive the eligible refund through the available scheme options (Section 11.2);
  - A consumer may not wish to return the eligible containers via the scheme collection facilities and may instead elect to place the eligible material in the kerbside recycling bin. In this case, the consumer does not receive the refund, instead the businesses the process the collected kerbside materials (i.e., Material Consolidation Facility or Material Recovery Facility) can claim this amount or may have a refund sharing agreement in place with the local council (Section 11.2);
  - The deposit value should be high enough to incentivise consumers to put in the additional effort to return their bottles and encourage people to collect litter and return containers (Section 11.3);
  - The deposit value can impact initial purchasing behaviour (Section 11.3):
    - For those who do not intend to return the containers, the deposit will act as a product tax.
    - If the operational costs of the scheme are too high this may discourage customers purchasing beverage container products.
  - In relation to the monetary value acting as the incentive, the act of storing a new separate stream of recyclables rather than disposing it in the existing bins at home, as most are used to, will require additional time, space and transport requirements. A deposit value that is considered to be too low may not incentivise consumers to put in the additional efforts (Section 11.3);



- If beverages are clearly labelled to inform consumers that they are paying a refundable deposit and if the system for returning the beverages is convenient, then the impact of the deposit on the consumption behaviour of consumers should be limited (Section 11.3);
- According to the New South Wales Environment Protection Authority, incentives in container return schemes are particularly effective in making positive long-term behaviour changes for people who don't already recycle, people who describe themselves as 'non-environmentalists', and lower income householders (Section 11.3);
- The incentives provided by the deposit value could be dependent on the type and cost of the beverage itself, and that this could have unexpected consequences on consumer behaviours (Section 11.3);
- The OECD policy manual document note that the refund amount is the key element in the system that governs consumer behaviours and is consequently likely to impact the performance of the system and success in achieving a high return rate (Section 11.4);
- To justify the high costs that may be associated with a separate collection system, the system should incentivise a high return rate. If the deposit value is too low for consumers to be incentivised to return containers, costs may be incurred that are associated with the disposal of the container in kerbside (Section 11.4);
- The refund amount is the key element in the system that governs consumer behaviours and is consequently likely to impact the performance of the system and success in achieving a high return rate (Section 11.4);
- The New South Wales Environment Protection Authority stated that evidence has shown that container return rates vary depending on the value of the financial incentive, and that legislated container return schemes that offer a financial incentive demonstrate high rates of container recovery (Section 11.4);
- According to the New South Wales Environment Protection Authority, incentives with a higher financial value generated higher return rates (Section 11.4);
- The relationship between the deposit value and return rates is not linear. After a certain point, high value incentives can generate smaller increases in return rates. Other variables can also contribute to this such as the location of collection return facilities (Section 11.4);
- A feasibility study<sup>1070</sup> undertaken in 2009 for a container deposit scheme in Tasmania suggested that a deposit value of AUD20-cents is adopted rather than AUD10-cents. The study stated that the value is expected to help address the diminished deposit value over time which eventually results in decreased recycling rates (Section 11.4);
- To keep up with inflation, preliminary analysis suggests that an AUD5-cent deposit increase is recommended for approximately every 10-years (Section 11.4);
- The New South Wales Environment Protection Authority stated that evidence has shown that container return rates vary depending on the value of the financial incentive, and that legislated container return schemes that offer a financial incentive demonstrate high rates of container recovery (Section 11.4);
- Of New Zealand consumers surveyed between February and March 2020 (Section 11.5):
  - 78% were in favour of a NZ CRS with 72% reporting that they were very likely to use the NZ CRS.
  - 79% reported convenient drop-off points (i.e., container return facilities) and 67% reporting the need for easy to understand information regarding what containers the NZ CRS covers;
  - 64% noted that all containers made of plastic, glass and metal should be included in the NZ CRS;

<sup>1070</sup> Hyder Consulting 2009, Feasibility Study of a Container Deposit System for Tasmania, available from: [https://www.europarl.europa.eu/RegData/etudes/note/join/2011/457065/IPOL-AFET\\_NT\(2011\)457065\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/note/join/2011/457065/IPOL-AFET_NT(2011)457065_EN.pdf)

- 70% noted that supermarkets would provide the most convenient place to return scheme eligible containers followed by 63% at collection depots (e.g., community recycling centres and recycling facilities), 40% to other retail outlets (e.g., bottles stores and dairies);
  - 58% (more than half of respondents) considered a deposit amount up to NZD20-cents would be sufficient;
  - 31% were supportive of a deposit amount of NZD5-cents to NZD10-cents;
  - 40% of respondents supporting cash, 21% direct payment to a bank account, 16% voucher, 6% charity and the remaining 17% reporting other methods; and
  - 69% believed it was somewhat important or very important for the refundable deposit fee to be shown on shopping receipts and 62% believed it was somewhat important or very important for the non-refundable scheme administration fee to also be shown on shopping receipts.
- A commonality between all global container return schemes is the need for collection and sorting of scheme eligible containers whereby retailers and/or collection depots are responsible for handling (collecting, sorting and packaging) empty containers which are then transported to the materials processor or direct to the container manufacturer. A handling fee is used to compensate these collection facilities and is generally paid by the agency tasked with managing the scheme (Section 11.6);
  - Across the global container return schemes, it is the beverage producer that pays both the deposit and the handling fee per container to the agency responsible for managing the scheme. Some global schemes apply a differential handling fee depending on whether beverage containers are compacted or sorted, with compaction receiving a higher handling fee reflecting the transport efficiencies generated by compacting the containers and that compaction at the RVM is reported to reduce the opportunity for fraudulent claims (e.g., collector or sorted passing already redeemed containers back through the RVM) ((Section 11.6);
  - The transport of materials can vary depending on the scheme design but may include management by the scheme Managing Agency whereby contracts with logistics providers are entered into, the Managing Agency utilises their own transportation fleet, or third-party logistics providers service collection depots or processors. While each arrangement has their own unique attributes, generally, the cost of logistics in a container return scheme can represent a large cost of the scheme operational finances (Section 11.7);
  - An important consideration when determining scheme logistic arrangements and associated costs is the price impact variation depending on metropolitan versus regional/remote areas and transport preferences depending on container type and volume (e.g., higher proportion of glass versus compressed plastic bottles) (Section 11.7);
  - In addition to maximising transport efficiencies by methods such as contracting third parties and utilising back-haul arrangements, the Managing Agency must ensure strict anti-fraud measures are put in place (e.g., contractual obligations, auditing and verification, reporting) to closely monitor and assess the performance of the logistics companies involved in the scheme. Where the Managing Agency does not retain oversight and/or control of the logistics companies (e.g., collection depots/processors arrange individual logistics contracts), the Managing Agency risks increased fraudulent activities due to lack of data transparency (Section 11.7);
  - The total value of unredeemed deposits is linked to the deposit value and container return rates particularly in the early stages of a deposit scheme. Unredeemed deposits (or unclaimed deposits) are deposits that were paid on the container, but the containers were not redeemed through the scheme (e.g., kerbside refuse collections, disposal to landfill, litter stream) (Section 11.8);
  - Across the global container return schemes, the revenue generated from unredeemed/unclaimed container refunds is reported to directly or indirectly support funding

of the respective scheme, while acknowledging that in some schemes the unredeemed deposits may be absorbed by, or kept by, the beverage industry or by the respective scheme government authorities. This is achieved through the beverage industry (where the beverage industry manages the scheme) retaining and using unredeemed/unclaimed container refunds to cover their costs, or the government may take ownership of these funds. In some cases, the value of material recyclate has been reported to also fund the operation of the scheme. However, most container return schemes also have additional fees to assist with funding the scheme (including handling expenses associated with the recovery of materials) such as Container Recycling Fees (Section 11.8);

- Recognition that not all container packaging materials are equal with some more recyclable and valuable than others. In practice this means that materials that are difficult to recycle or problematic such as liquid paperboard may need to incur additional cost to see them successfully recycled in keeping with the outcomes of the NZ CRS design while other materials may receive a net income such as aluminium. Approaching this in an open and transparent way will ensure container material choices by beverage producers are recognised and reflects any net cost or revenue that is expected to ultimately be passed on to the customer. Also, in keeping with the outcomes of the NZ CRS design, the non-financial impacts associated with container material choice must be factored in or at the very least provided for to help shape the direction and choice of container material in the future (Section 11.9);
- In the establishment of container return schemes, the eligible scheme material is effectively allocated a financial value that in most cases is more than its material value (e.g., scrap aluminium). Therefore, the entity responsible for operation and management of the scheme needs to have in place monitoring and enforcement procedures to prevent fraudulent activity and claims. Fraud is a tangible risk for any container return scheme and may include situations whereby a collection contractor might collect uncompacted containers from an RVM and pass these back through the machine to redeem the refund. Where RVMs are used that compact and/or crush the containers (e.g., aluminium cans, plastic bottles), the container 'destroyed' so that the container nor unique identification scheme logo cannot be re-read by the RVM (Section 11.10);
- Where schemes utilise manual collection facilities, including collection depots, automated container counting and verification helps to identify fraudulent activity and ensure that payment is only provided on eligible scheme material. To help achieve this, scheme eligible containers need to include a specific scheme logo (e.g., unique scheme identifier) which is applied in a way so as to minimise fraud (e.g., labels printed directly on to the container or a self-adhesive label applied by the beverage producer (Section 11.10);
- Reporting of clear and transparent scheme related information is important to ensure financial transparency (where appropriate) is provided to relevant scheme participants. Many of the global container return schemes employ an integrated but separate financial accounting system to manage scheme costs including deposit refunds, handling fee payments and management of unredeemed/unclaimed deposits to ensure transparency and auditable records to be maintained and assessed. Additionally, reporting of key performance data by the agency responsible for scheme operations and performance provides greater clarity and transparency on the efficiency of the scheme whilst highlighting areas of improvement (Section 11.11);
- While implementation of a container return scheme is likely to provide MRFs and councils with revenue from unredeemed/unclaimed deposits, this must be considered in the overall context where the amount of recyclable material entering a MRF from kerbside collections is likely to decrease as consumers seek to redeem the deposit value. However, the impact of any changes in recyclable material entering a MRF is also dependent on the MRFs broader commercial arrangements and their ability to offset the loss of kerbside material with other sources of recyclable material (Section 0);

- Where information was available, container return schemes are likely to result in a change in the amount of materials (including those valuable materials such as PET) processed by a MRF as these materials are redeemed at collection points. Alongside a change in material quantities entering the MRF, the MRF may also consequently see a change in financial revenues including a reduced amount of gate fees collected and may reduce the amount of material a MRF can sell to commodity markets. However, as already noted, MRFs may also see an increase in revenues associated with eligible scheme material deposits (Section 11.13); and
- Alongside the potential reduction in material volumes entering a MRF, savings may also be realised by Councils through reduced kerbside collection costs and extended landfill life (Section 11.13).

### 18.1.10 Extended Producer Responsibility and Kaitiakitanga Whakanaonga – Product Stewardship

The outcomes of the Kaitiakitanga Whakanaonga - Product Stewardship research and feedback received from the SDWG indicate a growing awareness of the continued pressure global economies and populations are having on Papatūānuku and rawa taiao - rawa taiao - natural resources to produce the wide range of products currently available on the market. As the research has demonstrated, continued population growth and demand for products and services will continue to place pressure on environmental resources, and to limit this, will require countries to implement policies that improve whakahaere rauemi - resource management and ensure sustainable materials management building on the principles of the pūnaha whakarōpū para - waste hierarchy of reduce, reuse and recycle. To enable this to occur, many countries, particularly those within the Organisation for Economic Co-operation and Development (OECD) have adopted an environmental policy approach in which a producer's responsibility for a product is extended to the post-consumer stage of a product's huringa mataora - life-cycle. This policy approach is based on "polluter pays" where the financial responsibility for the entire huringa mataora – life-cycle of the products and packaging is shifted from taxpayers and councils to producers and ultimately the consumer. As a result, Extended Producer Responsibility seeks to encourage and/or incentivise producers to redesign products and packaging reducing the amount of post-consumer material entering ruapara - landfills, increase hangarua - recycling and whakamahi anō - reuse (e.g., refillables) and avoid using materials that may pose risks to human health or the taiao - environment.

While there is no one Extended Producer Responsibility system and associated governance structure that could be simply transposed into a NZ CRS design to cover all eligible scheme material, the three (3) objectives of the NZ CRS, namely:

4. Change the way Aotearoa New Zealand values beverage containers that will see increased hangarua - recycling and new opportunities for refilling;
5. Reduce the volume of plastics and other container litter currently ending up in our streams (i.e., awa – waterways), moana - marine environment, wāhi tūmatanui - public spaces and ruapara - landfills; and
6. Give effect to ōhanga āmiomio - circular economy outcomes and any future priority product guidelines.

will provide the foundation on which the scheme will give effect to the principles of Extended Producer Responsibility. The benefit of applying these foundation Extended Producer Responsibility objectives to the NZ CRS design is to acknowledge and accept the changing global economy and the need to support the New Zealand Government in efforts to transition from a linear economy to ōhanga āmiomio - circular economy. Additionally, recent events including China National Sword and the COVID-19 global health pandemic, highlighted the delicate relationship between reliance on global post-consumer recycling markets (e.g., plastics and fibre) and the volume of post-consumer recyclables produced by economic activity. As a result, Aotearoa New Zealand along with many other countries, is now having to

reassess the waste generation and management framework, including, for example, declaring the six (6) priority products requiring producers to develop schemes for Ministerial accreditation to extend producer responsibility for reducing huringa mataora - life-cycle impacts of those products through to investigating onshore processing capacity and considering regulations to establish mandatory kaitiakitanga whakanaonga - product stewardship schemes – such as the NZ CRS.

As countries implement mechanisms to transition from a linear to ōhanga āmiomio - circular economy, utilising mechanisms such as Extended Producer Responsibility and mandatory product schemes (e.g. NZ CRS), opportunities for employment through the establishment of collection facilities and refilling may be supported thereby creating local and national economic opportunities. It is though acknowledged that a detailed modelling and cost-benefit analysis are required to provide clarity on the opportunities and constraints which is subject to a review analysis currently underway by PwC and which is supported by the findings of the research collated and summarised to date.

Taking the above research into consideration, the following Extended Producer Responsibility conclusions can be drawn:

- Extended Producer Responsibility systems are based on “polluter pays” where the financial responsibility for the entire huringa mataora - life-cycle of the products and packaging is shifted from taxpayers and councils to producers and ultimately the consumer (Section 12);
- Extended Producer Responsibility aims to encourage producers to (Section 12):
  - Redesign products and packaging reducing the amount of post-consumer material entering ruapara - landfills;
  - Increase hangarua - recycling (recycling and recoverability are influenced by the producer making products that are easy to reconstitute [i.e., disassemble] and recycle) and reuse; and
  - Avoid using materials that may pose risks to human health or the taiao - environment.
- Legislation is a significant driver in the establishment of Extended Producer Responsibility systems, with most systems being mandatory rather than voluntary (Section 12.1);
- Producers have often been reported to set up Extended Producer Responsibility systems which are managed by Producer Responsibility Organisations (PROs), the equivalent of which is the Managing Agency in the NZ CRS design (Section 12.1.1);
- The guiding Extended Producer Responsibility system principles for governments should provide the following (Section 12.1 and Section 12.1):
  - Provide producers with incentives to change product designs.
  - Stimulate innovations.
  - Take a huringa mataora – life-cycle approach.
  - Clearly define responsibilities.
  - Chose flexible policy instruments adapted to the particular product and waste stream.
- The objective and scope of the Extended Producer Responsibility system should be clearly defined, including (Section 12.3):
  - Producers of the products should be identified;
  - Establishment of reporting and monitoring;
  - Development of appropriate enforcement mechanisms and sanctions;
  - Increase the level of the EPR system ambition;
  - Broadening the scope of products covered;
  - Internalising environmental costs; and
  - Transparency – require the EPR system to make information available to assess scheme performance and to identify ways in which the scheme can be made more efficient and effective.

- To enable the successful establishment of EPR systems, the design and governance of the scheme is key to their performance, for example, setting of scheme targets, compliance monitoring, financial management (including the management of free-riding) (Section 12.1.1);
- Internalisation of end-of-life costs and strict enforcement would strengthen incentives for improving the eco-design of products and packaging whereby the Extended Producer Responsibility system sets fees at a level where they recover the full cost of the end-of-life management of the products covered by the system (e.g., NZ CRS) (Section 12.1.1);
- Three (3) key measures incentivise improved product design and accountability for end-of-life management (Section 12.1 and Section 12.2):
  - Producer responsibility implemented at the level of individual producers to incentivise eco-design of products.
  - Producer fees should be closely linked to the actual end-of-life treatment costs of their products (i.e., costs to collect, consolidate and beneficially use materials), rather than fixed fees and/or modulated fees that differ according to the specific design features that make products more easily recyclable (e.g., Advanced Material Recycling Fee – refer Section 11 for further information).
  - Where products are globally traded, better eco-design incentives could be achieved by harmonising environmentally sensitive design through legislation or financial incentives (e.g., environmental tax).
- There are several key Extended Producer Responsibility system policy drivers which can be implemented either individually or in combination to enable producers to take responsibility for their products and packaging end-of-life management (Section 12.1.2):
  - Product take-back requirements (e.g., the voluntary take-back schemes offered by Resene Paints, Vodafone and Spark).
  - Economic and market-based incentives (e.g., deposit refund, Advanced Disposal Fees, material taxes, combination tax/subsidy).
  - Regulations and performance standards (e.g., requirements on the use of minimum recycled content to encourage, for example, greater take-back of products and packaging).
  - Information (e.g., raising public awareness through measures such as labelling, consumer communication).
- To help achieve a measurable quantitative reduction in the consumption of single-use products there are several conditions which are recommended for the establishment of effective reuse (e.g., refillables) schemes, including (Section 12.1.3 and Section 12.1.4):
  - Container design – containers that have durability enhanced by universal container designs that enable acceptance of containers across different reuse schemes (e.g., standardised bottle design).
  - Hygiene requirements – appropriate washing facilities as well as transportation and storage.
  - Convenience and accessibility – engagement with consumers to highlight the scheme and the use of reusables as alternatives/substitutes for single-use packaging.
  - Scheme infrastructure and scale of scheme – appropriately located drop-off facilities, collection logistics, washing infrastructure, redistribution, customer refunds where appropriate, store marketing, employee training.
- To support and facilitate the development of reuse and/or refillable schemes and to provide consumers with a conscious choice between single-use plastic packaging and more sustainable options, government policy is needed to support this process, including (Section 12.1.3.1 and Section 12.1.4):
  - Include targets on the share of refillable beverage packaging placed on the market.

- Place a tax on single-use plastics (NOTE: the same principle could equally apply to all types of packaging material) such as an 'Eco-Fee' to incentivise producers to seek alternative materials.
- Consumer to have visibility on the cost of single-use packaging through payment in store (e.g., visible on shopping receipt).
- Container return schemes to include a broad range of items and mandate reusable items in the scheme.
- Introduce incentives and provide financial support for reusable items and systems to overcome barriers to establishing the scheme (e.g., for the establishment of washing facility infrastructure).
- Modulation of fees on materials that are difficult to recycle versus those that have established recycling pathways and/or are reusable.
- Support procurement processes to include reusable targets.
- The governance of Extended Producer Responsibility systems involves roles for government, producers and providers of collection and processing services. However, in many global Extended Producer Responsibility systems, the entity established to implement and have responsibility for the EPR system requirements is commonly referred to as the Producer Responsibility Organisation (PRO). The PRO equivalent for the NZ CRS design is the Managing Agency (Section 12.4);
- Managing Agencies can be not-for-profit (typically, e.g., Managing Agencies in British Columbia, Canada are legally obliged to have not-for-profit status), for-profit firms (occasionally) and government agencies (rarely) (Section 12.4); and
- Depending on the structure of the Extended Producer Responsibility system and any associated kaitiakitanga whakanaonga - product stewardship schemes, the consumer may be required to pay at the point of sale a deposit or fee for the cost of collection, recycling and processing the material (Section 12.4 and Section 12.5).

### 18.1.11 Legal Framework

The outcomes of the research and feedback received from the SDWG show that the majority of global container return schemes are supported by a specific set of legislative instruments to enable schemes to, for example, operate at maximum efficiency, protect the scheme against fraud and ensure scheme participants have clarity and transparency on their respective roles and responsibilities in delivering the scheme to consumers. To achieve this, scheme regulations commonly include specific operational and performance measures such as conditions of acceptance criteria, container return rate targets, forms of refunds, financial management and registration, recording and reporting requirements, all of which assist the Managing Agency and scheme Governance Board to track scheme operations, performance and minimise fraudulent activities.

Management of scheme finances has been highlighted in the research as a key scheme component that requires clear controls to be established through, for example, financial management platforms ensuring full transparency of scheme costs to all scheme participants, including Government. Ensuring clarity and transparency of scheme finances is a critical component for the NZ CRS to ensure both full scheme transparency and provide a safeguard to scheme participants where confidential and/or commercially sensitive information is provided to the Managing Agency which may have competitor membership.

Further, the establishment of scheme legislative instruments are commonly supported within an existing legislative framework which provides the basis for the establishment of a container return scheme legislative instrument. In the Aotearoa New Zealand context, the Waste Minimisation Act 2008, the New Zealand Waste Strategy, the Local Government Act 2002 and the Resource Management Act 1991 provide the foundation documents on which a bespoke NZ CRS legislative instrument can be established so as to ensure the success of the NZ CRS design. These pieces of legislation also ensure that those

exercising functions under these acts take into account Te Tiriti o Waitangi principles, give due consideration to tikanga Māori and facilitate participation by Māori. In addition to the three primary legislative Acts, the NZ CRS design is also influenced by several other national legislative documents (e.g., Litter Act 1979, Climate Change Response Act 2002) and international agreements (e.g., Montreal Protocol, Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal ) which will require detailed assessment and review during the implementation stage to ensure all relevant aspects are reviewed and accounted for in the scheme design.

Taking the above research into consideration, the following legal framework conclusions can be drawn:

- Robust regulatory guidance is at the centre of a successful container return scheme. Most existing schemes are implemented through legislation or regulations that allow for a continuously successful operation, including (Section 13):
  - The schemes is operated at maximum efficiency;
  - The scheme is protected against fraud; and
  - Clear and well-defined obligations and processes are understood by all participants.
- Most container return scheme legislation or regulations address common items of the schemes' design, including (Section 13):
  - The conditions of acceptance for eligible containers;
  - The requirements for the collection points and container return facilities;
  - The accepted counting methods;
  - The forms of refunds that can be provided;
  - The amounts of deposits and refunds;
  - Signage and scheme awareness requirements;
  - Legal obligations of all participants;
  - Registration, recording and reporting requirements;
  - Application of environmental taxes (e.g., Norway);
  - Resource recovery performance indicators; and
  - Prohibited activities and penalties.
- Recent international market changes including restrictions by China on the importation of waste and recyclables has highlighted the need to take a closer look at the way Aotearoa New Zealand manages its waste, including current onshore processing and recycling (Section 13.1);
- An important instrument of legislation is that it provides for appropriate anti-fraud measures as fraudulent activity leads to short-changing and money leaving the scheme, damaging the ōhanga āmiomio - circular economy created by the scheme, and leaving the country's recycling economy (Section 13.2);
- The types of fraud undertaken can be categorised by two primary activities, fraud undertaken for illegal economic profit and fraud undertaken to avoid the fulfilment of legal obligations, for example, (Section 13.2):
  - Photocopying or production of fake barcodes, labels and deposit vouchers to generate fake eligible containers under the scheme;
  - Manufacture of fake containers for refund redemption;
  - Retailers and/or processors trying to claim extra handling fees;
  - Customer or shop staff feeding containers through twice; and
  - Container collectors feeding containers through RVMs twice.
- Similar to penalties being applied for attempts to make an income by cheating the scheme, penalties are also included in legislation or regulations for failing to fulfil the legal obligations for different parties under the scheme (Section 13.3);



- Penalties are one of several measures for discouraging fraud and encouraging compliance with the law. Besides the clear identification of contractual obligations of all involved parties, the violations and the penalties for non-compliance, a number of other measures are identified in the legislation or regulations of existing schemes in order to manage and minimise fraudulent activity, including (Section 13.3):
  - Barcodes and specific scheme marking;
  - Automated counting;
  - Crushing of containers;
  - Verification processes;
  - Record keeping;
  - Key performance indicators and quotas;
  - Contractual agreements; and
  - Signage.
- Auditing processes are some of the most continuously used and effective measures of ensuring continuous compliance in accordance with contractual agreements, to achieve, for example, the following (Section 13.4):
  - To maintain the integrity of the scheme;
  - To ensure its financial viability;
  - Oversee kaitiakitanga whakanaonga - product stewardship; and
  - Maintain public trust.
- In many schemes, container return facilities must meet strict quality control and audit procedures with some schemes requiring container return facilities to undertake secondary and tertiary counts of collected eligible containers (Section 13.4);
- In many schemes, producers are required to keep auditable electronic records of their supplied beverages and report to the Managing Agency on the volume of their beverages by month and by material type (Section 13.4 and Section 13.5);
- Auditing of export funds is commonly managed via Export Refund Claim Agreements and carried out by the Managing Agency (Section 13.4 and Section 13.5);
- The requirement for reporting of robust, accurate and consistent key performance data is vitally important to minimise fraud and ensure correct refunds are calculated and issued, for example, (Section 13.5):
  - Keeping scheme participants accountable;
  - Tracking financial flows of the scheme;
  - Tracking the quotas and operational performances of the participants;
  - Providing transparency to the scheme; and
  - Highlighting areas of improvement.
- In addition to auditing the information produced by scheme operators, it is important to audit the information released by the Managing Agency, such as engaging an independent financial accounting firm to assess scheme financial data thereby ensuring protection of the commercial information of all beverage producers since the Managing Agency commonly includes representatives from beverage producers (Section 13.5);
- To ensure scheme transparency, many Managing Agencies are required through legislation to publish publicly available annual reports including financial statements that are independently verified and provide scheme reports to the government (Section 13.5 and Section 13.6);
- The roles and responsibilities of all scheme participants must be clearly outlined in the legislation or regulations to ensure that fairness is upheld consistently during the scheme, and that all scheme participants are clearly aware of their legal obligations (Section 13.6);
- As part of the scheme's design, a monitoring or enforcement body (e.g. the Managing Agency) is required to ensure that the roles and responsibilities, as outlined by the legislation or

regulation, are complied with and to make sure that fraudulent behaviour is not undertaken (Section 13.6);

- In some schemes, it is the responsibility of the government department to establish procedures to protect the privileged, confidential, commercial or financial information obtained while collecting information for carrying out the requirements of the legislation or regulation. In other schemes, a Managing Agency manages the scheme, while the government department supervises compliances and audits the participants (Section 13.6);
- It is often preferred that scheme regulation is undertaken by the government department to ensure that the full range of players in the scheme are protected equally (Section 13.6); and
- The role of scheme governance is imperative in ensuring that the scheme is operating as it was designed to do, that all participants are undertaking their contractual obligations, and that the scheme remains fair to all participants. With appropriate scheme governance responsibilities, the government is able to penalise any fraudulent activities and failure to meet performance targets as required for the scheme (Section 13.7).

### 18.1.12 Scheme Managing Agency Organisational Form

The outcomes of the research and feedback received from the SDWG show that the scheme Managing Agency provides a pivotal role in the ultimate success of a container return schemes operation and performance. Commonly, the Managing Agency is required to deliver a consistent consumer focussed scheme, striving to make the scheme as cost efficient as possible, whilst continually improving on, and reporting against, the schemes social, economic, cultural and environmental strategic objectives – a common requirement of prescribed container return scheme regulations.

The operation and functioning of most container return schemes involve roles for government, producers, retailers, consumers, material processors and material re-processors, but the degree of influence of each of these groups is typically dependent on the governance arrangements responsibilities assigned to the Managing Agency. In most global container return schemes, it is the beverage producer that is responsible for establishing, operating and managing the scheme Managing Agency which may be a collaboration between multiple beverage producers (i.e., beverage brands) and in most cases, formed as a not-for-profit organisation. In such cases, the number of beverage producer representatives may be related to their respective market share, with, for example, greater market share equating to a greater number of representatives on the Managing Agency.

Commonly, the Managing Agency is structured to include an Executive Management Team comprising senior managers from, for example, finance, marketing, logistics, legal, risk and audit, operations and the Chief Executive Officer who are directly responsible for the operation and management of the scheme. The Executive Management Team is typically supported by a wider team of individuals employed by the Managing Agency to carry out the day-to-day functions of the Managing Agency which may include auditing of container return facilities, tracking eligible container return rates against refunds paid and communicating scheme developments to consumers. The additional function of the Executive Management Team is to provide transparent and robust information to the Governance Board to assist in the strategic management of the scheme. To achieve this, it is generally the Managing Agency Chief Executive Officer that provides the conduit of information through representation on the Governance Board.

Broadly, the research suggests that the ability for consumers and community organisations to actively participate in the day-to-day operations and management of a scheme is limited primarily due to the formation of a predominantly industry led Managing Agencies. However, the research suggests that an Executive Management Team that can liaise with stakeholders, including the consumer and community organisations provides diversity of knowledge, contributing to a customer focussed scheme and continual scheme improvements (e.g., through scheme surveys, direct relationships with community organisations).

The structure and function of a container return scheme Managing Agency is most often prescribed in scheme legislative instruments, which often clearly stipulate the roles and responsibilities of the Managing Agency and its management team.

Taking the above research into consideration, the following Managing Agency conclusions can be drawn:

- Broadly, Managing Agencies can be not-for-profit (typically; e.g., Managing Agencies in British Columbia, Canada are legally obliged to have not-for-profit status), for-profit firms (occasionally) and government agencies (rarely) (Section 14);
- Most global container return schemes operate under a not-for-profit (also referred to as non-profit) model rather than a for-profit model to ensure that scheme revenues are used to support the operation of the scheme (Section 14);
- Commonly, container return scheme Managing Agencies comprise a single organisation to manage the range of eligible scheme material and brands (e.g., collection, transportation and processing), but which may also involve municipalities (i.e., Aotearoa New Zealand local councils) that are responsible for collection and sorting of materials (e.g., collection of eligible scheme material via kerbside recycling services) – this relationship between the Managing Agency and the municipality is also known as ‘shared responsibility’ (Section 14);
- The operation and functioning of most container return schemes involve roles for government, producers, retailers, consumers and material processors and material re-processors, but the degree of influence of each of these groups is typically dependent on the governance arrangements and responsibilities assigned to the Managing Agency (Section 14);
- The structure and governance of the agency responsible for managing a regulated Kaitiakitanga Whakanaonga - Product Stewardship scheme (i.e., Managing Agency) has been reported by the Manatū Mō Te Taiao - Ministry for the Environment as being typically managed by not-for-profit entities that represent all producers of the specific product group (Section 14.1);
- A profit model applied to the scheme Managing Agency could lead to incentives to increase profitability whilst lowering environmental performance as a means of cost-saving. As such, many global container return schemes employ a not-for-profit (non-profit) model to ensure that scheme revenues are used to support the operation of the scheme (Section 14.1);
- Operation of a not-for-profit scheme is achieved by the Managing Agency generally having to meet specific conditions which may be imposed by the Governance Board and/or required by government legislation, which may include the provision of Annual Reports with full financial transparency of the scheme and requirements to reinvest any revenues from the sale of material or unredeemed deposits to be put back into the scheme (Section 14.2);
- The roles and responsibilities of Managing Agencies from across the range of global container return schemes is variable depending on the scheme design and specific statutory elements imposed by the respective jurisdictions (Section 14.2);
- A Managing Agency may be required to manage and deliver all aspects (e.g., financial, marketing, consumer interface, transportation and processing) of the scheme or simply manage and deliver specific components of the scheme (e.g., collection and transportation) which in turn influences the degree of control the Managing Agency has on the performance of the scheme (Section 14.3);
- There are several common themes which apply to many container return schemes which form the basis of the Managing Agency, particularly where the scheme is a not-for-profit organisation, including (Section 14.3):
  - Clear expectations, including the role and responsibility of the scheme Managing Agency;
  - The scheme is efficient and as low cost as possible;
  - Efficient and convenient return locations for consumers;

- Transparency and accountability;
- Promote and maintain beverage container return rates;
- Continuous scheme improvement;
- Promote and where possible ensure scheme participants meet their extended producer responsibilities in regard to the eligible scheme containers;
- Provide opportunities for social enterprise and benefits to community organisations; and
- Complement existing recycling activities and infrastructure where possible.
- In most container return schemes, the Managing Agency is responsible for the schemes operation and performance which commonly includes financial and commercial management, operational management, corporate and community relationship management, audit and risk management as well as oversight by a Chief Executive Officer (Section 14.3 and Section 14.4);
- Schemes establish and implement dispute resolution processes and a consumer complaints processes, for example, including through secure online portal access for scheme participants to phone contacts for consumers ensuring that any matters and/or concerns can be raised with the Managing Agency for consideration and where required review and remedy (Section 14.5);
- The Managing Agency's role and responsibility in scheme administration involves the oversight and control of the scheme guided by several key factors, including (Section 14.6):
  - Clear definition of scheme objectives and scope;
  - Ensure consistency with related policies;
  - Clear definition of the producer;
  - Communication and engagement with stakeholders;
  - Implementation of robust and transparent reporting and monitoring; and
  - Implementation of compliance and/or enforcement mechanisms.
- Reporting of container return scheme information ensures transparency for scheme participants, including consumers, retailers, producers, container return facilities, material processors and local and central government (Section 14.7);
- Most global container return scheme Managing Agencies are required by legislation to report on the operation and performance of the scheme including audited financial statements for the specific fiscal year through reports such as Annual Reports and/or Annual Sustainability Reports (Section 14.7); and
- Innovation across the range of global container return schemes is commonly associated with system efficiencies and improving scheme effectiveness, however some schemes have also supported social innovations, including, for example, depot operator marketing toolkits (Section 14.8).

Considering the NZ CRS design, the structural arrangement of the Managing Agency (e.g., Executive Management Team supported by Regional Coordinators focussed on delivering a consumer focused service as per the scheme requirements to Aotearoa New Zealand's regions) and the legal status of the entity (e.g. not-for-profit, charity, private, trust) will be critical elements in the establishment of a container return scheme that is managed by a balanced group of suitably qualified and experienced members. Further, the degree of independence from the Governance Board is a key NZ CRS design element to ensure stakeholders are fairly and equitably represented and importantly the views of New Zealanders are captured and reflected to improve the performance of the scheme to meet and exceed public expectations.

Fundamentally, the mandate of the Managing Agency will be to provide the day-to-day operational and performance management to ensure the scheme meets consumer and scheme participant expectations, as well as regulated requirements. Additionally, the role of the Managing Agency will be to serve all New Zealanders by delivering a successful and continually improving service to consumers. Therefore, a NZ CRS Managing Agency that is structured as an independent, not-for-profit entity comprising, for

example, an Executive Management Team including but not limited to, the Chief Executive Officer, Financial Manager, Operating Manager, Marketing and Communications Manager, Audit and Risk Manager, Community and Social Enterprise Manager, Collection Facility Manager and a Mana Whenua Relationship Manager (noting that relationships with Mana Whenua will be interconnected throughout the NZ CRS with the Managing Agency and scheme Governance Board accountable for achieving this) would provide a diverse management team focussed on ensuring the scheme meets and exceeds consumer and scheme participant expectations.

### 18.1.13 Scheme Governance Board

The outcomes of the research and feedback received from the SDWG show that typically, scheme Governance Boards provide a pivotal strategic role in providing direction to the Managing Agency to support the development and continual improvement of the scheme while also being responsible for reporting to the respective government agency on scheme performance – a common requirement of prescribed container return scheme legislative instruments.

Considering the NZ CRS design, the structural arrangement of the Governance Board will be a critical element in the establishment of a container return scheme that is governed by a balanced group of suitably qualified and experienced members selected for the skills and expertise they bring to the table such as strategists. Of the case studies presented in this section, there is variability in the make-up and mandate of scheme Governance Boards. Notwithstanding all other influencing factors, the variability in Governance Board arrangement appears at a high-level to be related to the design of the scheme and whether the design is predominantly based on the ‘polluter pays’ (i.e., beverage industry absorbs the majority of scheme costs) or whether the design is based on passing scheme costs on to the consumer at the point of sale. Consequently, the basis of the scheme design has a resultant broad influence on the Governance Board membership. The ‘polluter pays’ design such as the Queensland (Section 15.1.3) and Danish (Section 15.1.1) scheme case studies, commonly includes a higher proportion of beverage industry representatives to ensure the opinions and views of the affected sector are considered and are well represented in the scheme function, compared to lower representation of other sector groups, such as retail, manufacturers, community and the public.

Interestingly, the Danish scheme in acknowledgement of the predominantly beverage industry focussed Governance Board, established a separate legally mandated and independent ‘contact group’ representing a balanced cross-section of stakeholders, including the public, community, importers, cafés and restaurants, that are not represented on the scheme Governance Board. This additional ‘contact group’ has a similar function to the scheme Governance Board whereby scheme performance, financials, scheme projects, scheme operations, suggested legislated changes are reviewed and critiqued, with feedback provided to the scheme Governance Board to action. While the Danish scheme appears to provide for two (2) forms of a Governance Board, each appears deliver distinctly different functions focussing on (1) the beverage industry leading the strategic management of the scheme, and (2) the stakeholder ‘contact group’ critiquing the strategic direction and performance of the scheme while integrating community and public views directly into the schemes governance. The benefit of the Danish Governance model is that strategically the scheme benefits from the integration of both industry and wider stakeholder views and opinions to support its operation and performance, albeit achieved from the formation of two (2) Boards.

Where a scheme design is based on visibly passing costs on to the consumer at the point of sale (e.g., deposit, scheme fee, Advanced Material Recovery Fee), the Governance Board commonly comprises representation from the community, consumer, beverage industry, retailers, return facilities and manufacturers, with a similar strategic mandate as discussed in the Queensland and Danish cases above. In the case of Alberta (Section 15.1.2), this broad representation is used to encourage the consumer and community to actively participate in the governance of the scheme alongside representation from industry groups. While a diverse Board membership can at times provide a challenging environment within which to make decisions, diversity amongst the membership can enable

more robust decisions to be made based on diversity of knowledge and experience. The benefit of a Governance Board that incorporates a diverse scheme membership is ensuring all scheme participants have an active voice in the strategic governance of the scheme.

Taking the above research into consideration, the following Governance Board conclusions can be drawn:

- The Governance Board in most cases is comprised of representatives from several stakeholder groups which may include beverage, retailers, consumers, community, local and central government to ensure that schemes strategic direction is underpinned by social, economic and environmental outcomes (Section 15.1);
- In many global container return schemes the Managing Agency and Governance Board are required via regulation to meet specific scheme targets (e.g., return rates and the number of container return facilities) which are used to measure scheme performance and provide important data on which both the Managing Agency and Governance Board are held to account against(Section 15.1);
- Specific regulations provide the foundation of a container return scheme, with the Governance Board along with the respective Managing Agency commonly establishing a business plan to reflect the schemes strategic direction while including measurable indicators to support environmental, social and economic outcomes. For example, common strategic areas of reporting include, return rate performance against regulation and previous years data, establishment and development of container return facilities, tracking scheme generated greenhouse gas emissions, scheme employment numbers, distances travelled by material type to end-markets as well as fiscal indicators (Section 15.2);
- Along with transparency and accountability is the requirement for Governance Boards to ensure appropriate management of scheme finances, including setting of budgets and establishing appropriate approval processes. Where Government agencies were directly involved in the performance of the container return scheme, budgets would either be approved by the Government, or budgets reported to the government agency by the scheme Governance Board. Similarly, where budgets were developed by the Managing Agency, review and approval of these appeared to be carried out by the Governance Board under a charter reflecting scheme regulatory requirements (Section 15.3);
- While the processes for approving scheme finances (e.g., scheme budgets) was dependent on the scheme design and role and responsibility of the Managing Agency and Governance Board, it would appear that Government has an additional significant compliance role to play in both approving and/or scrutinising the financial records of the scheme (Section 15.3);
- Scheme performance measures including target container return rates are often included in regulation to provide a measure against which the Managing Agency and/or Governance Board can be held accountable against. To ensure these targets provide accountability, schemes have been reported to carry out annual surveys of scheme participants, including consumers, to provide clarity on whether the scheme requires a review and/or any amendments, or whether return rates have stagnated, supporting a review of the schemes regulation and/or an increase in deposit level (Section 15.4);
- The role of the scheme Governance Board in ensuring accountability to stakeholders including consumers is commonly through strategic oversight and performance measures of the Managing Agency, whereas the role of the Managing Agency is to provide visibility and transparency of scheme information, such as financial performance and return rates to scheme participants, including detailed scheme performance reports provided to the Governance Board (Section 15.4 and Section 15.5);

- The Governance Board commonly supports the Managing Agency through the development of strategic business plans which are set for a period of time (e.g., annual, bi-annual, three-years, 5-years). The purpose of the business plan is to set the overarching strategy to facilitate performance of the scheme as well as stabling a roadmap for continual scheme improvements (including the provision of stretch targets for the Managing Agency). The timeframe a business plan is established for is generally dependent on factors including, legislative directives, policies and business cycles (Section 15.5); and
- Container Return Scheme Governance Boards commonly integrate processes for continual scheme improvement into the strategic business plans, and in partnership with the Managing Agency, establish measurable objectives including programs and initiatives to maintain and improve scheme performance (Section 15.5).

The Governance Board membership and the degree of independence is a key NZ CRS design element to provide not only independent (e.g., no conflict of interest) advice and guidance, but importantly, that the Governance Board represents and ensures the views of New Zealanders are captured, integrated and reflected to improve the performance of the scheme to meet and exceed public expectations. Fundamentally, the mandate of the Governance Board will be to serve all New Zealanders and central Government by providing the strategic direction and to ensure the ultimate success of the scheme. Consequently, a NZ CRS Governance Board that is structured as distinctly separate from the function of the Managing Agency Executive Management Team, with the exception of the Managing Agency Chief Executive Officer, would provide a balanced, equitable stakeholder representation whilst ensuring the NZ CRS is consumer focussed and that the schemes strategic direction is underpinned by social, economic and environmental outcomes.

#### 18.1.14 Reporting

The outcomes of the research and feedback received from the SDWG show that reporting of scheme information is a critical element in assessing the performance and operation of a container return scheme, monitoring and ensuring the continuous success of the scheme and ensuring robust, accurate and consistent information is available to determine where obligations are not being met and ensure correct refunds are calculated and issued. Along with scheme operational and performance data, reporting also provides valuable information to both the Managing Agency and Governance Board to assess the appropriateness of continual scheme improvement measures so as to maintain scheme performance and consumer engagement – thereby ensuring the scheme meets regulatory requirements, and, importantly meets the needs and expectations of the consumer.

Given the importance of reporting, most global container return schemes have recognised that scheme participants require a specific reporting procedure that acknowledges the participants role and responsibility in the scheme. For example, where a scheme participant is involved in the collection of eligible scheme materials, reporting requirements may involve, for example, accurate records to be held of the number of eligible containers received and accepted and/or rejected, the total value of deposits returned to the consumer or total number of eligible containers transported to a Material Consolidation Facility. Generally, it is the role and responsibility of the Managing Agency coupled with any specific scheme reporting regulations that determines the details of scheme reporting processes and procedures. These requirements are commonly interlinked with the various scheme operational and performance measures such as risk and compliance processes.

Additionally, as part of a schemes operational and performance reporting procedures and as per the regulations, a scheme's compliance and audit processes may require scheme participants to report data at specific timeframe intervals such as daily, weekly, monthly, quarterly depending on the degree of scheme risk such as fraud mitigation and accuracy and timeliness of invoice payments.

Taking the above research into consideration, the following reporting conclusions can be drawn:

- Reporting is one of the most important measures for monitoring and ensuring the continuous success of the scheme. The requirement for reporting of robust, accurate and consistent information is vitally important to identify where obligations are not being met and ensure correct refunds are calculated and issued, including (Section 16):
  - Track scheme efficiency;
  - Identify areas of improvement;
  - Minimise fraud;
  - End-to-end transactional/chain of custody data and reporting;
  - Ensure participants are being compliant with their obligations;
  - Monitor accurate transfer of money as part of the financial flow of the scheme;
  - Ensure scheme transparency;
  - Track operations against scheme quotas, targets and objectives; and
  - Publish accurate public information such as container return rates.
- Reporting of clear scheme related information is important to ensure operational and financial transparency and where appropriate, is provided to relevant scheme participants (including the consumer). Many of the global container return schemes employ a financial accounting and operational reporting system to manage scheme costs and performance to ensure transparency and auditable records to be maintained and assessed (Section 16.1);
- Reporting requirements vary depending on the scheme participant, including:
  - Consumers may at times be required to report information for the purpose of fraud minimisation where consumers are redeeming a large quantity of containers (i.e., written container declarations for container returns over a specified limit) (Section 16.1.1.2);
  - Where retailers employ a Reverse Vending Machine (RVM) the collection of data and reporting requirements is undertaken automatically through the electronic systems imbedded in RVMs. If containers are accepted and refunded manually, retailers are usually required to collect manual information on the empty containers that they collect and refund, and the accounting, drop offs and collections that they may undertake. Retail staff are often required to be well trained in the reporting requirements that retailers are required to undertake (Section 16.1.1.3 and Section 16.3);
  - Beverage and container manufacturer have extensive reporting requirements which are commonly detailed in the regulations of most schemes. In most situations, beverage and/or container manufacturers are required to provide monthly sales data in order to support the Managing Agency, including (Section 16.4):
    - Tracking scheme costs and sending out the relevant invoices;
    - Tracking scheme containers placed on to the market and the eligible containers returned;
    - Having complete transparency and visibility on the performance of the scheme;
    - Identifying areas of improvement; and
    - Ensuring that producers are undertaking their legal obligations.
  - Reporting requirements for collection point operators are dependent on the method of container collection with accurate manual counting and recording processes required where manual counting is undertaken. Where automatic counting systems are used such as Reverse Vending Machines, data collection and storage is automatically undertaken by the machine (Section 16.4); and
  - Where a Material Recovery Facility (MRF) processes scheme material, the facility is required to keep separate eligible scheme containers, record the receipt, processing, counting, weighing, storage and electronically delivery data so that the throughput of this material through the MRF can always be tracked and audited (Section 16.4).



- Participant surveys have been extensively used as a research method, in order to create well-designed schemes that are based on informed decisions and the needs and experiences of different scheme stakeholders, including (Section 16.2):
  - Employment impacts;
  - Convenience and access of collection point locations and systems;
  - Experience of required obligations;
  - Scheme performance against targets;
  - The market share of different beverages and material types; and
  - Stakeholder experiences.
- Surveys carried out during the design stage have been used to understand if the community supports the proposed scheme and the community's general perception of container return schemes (Section 16.2);
- Surveys carried out during the operational stage of the scheme are used as a mechanism to record and manage faults in the existing system and provide the informed basis for required changes. Understanding the experiences of the participants is important in order to fix problems where they may occur, ensure continuous satisfaction of participants, and guarantee the continuous success of the scheme (Section 16.2);
- Where scheme revisions are undertaken, participants surveys provide an opportunity to ensure that all consumer concerns are addressed, assess and learn from the schemes performance and operation and understand if the public is in favour of the revision (Section 16.2);
- Diversion calculations are important in determining the resource recovery rates and to assess the performance of the scheme against the recovery rates that were set as targets. Additionally, diversion calculations aid in understanding which types of schemes are the most effective (Section 16.3);
- The way in which eligible containers are counted has considerable influence in ensuring accurate recording and reporting of data and the ability to accurately track container return rates. Where manual counting is undertaken, the diversion calculations are dependent on the information provided by the operators of collection facilities and require that operators have accurate manual counting and recording processes. In comparison, with electronic counting systems, the use of Reverse Vending Machines and barcodes allows for data collection and transfer of information to be simplified, instant and virtually guaranteed, and reduces the logistical requirements for operators (Section 16.3);
- As part of the contractual obligations, container return schemes often require transparent and auditable records to be maintained and assessed by scheme participants, including (Section 16.4):
  - The sales data and financial information of producers, such as records of deposits and refunds, are audited by the Managing Agency. The auditing of producers helps guarantee that accurate financial transparency is provided to relevant scheme participants, and that fraud is not undertaken by producers;
  - Material Processing Facilities (e.g., MCF, MRF) are commonly required to undertake detailed data reporting dependent on the assessment method as per the legislation, to retain transparent data records and ensure compliance with all scheme Managing Agency requirements. In addition, Material Processing Facilities (e.g., MCFs, MRFs) are most often required to undertake internal and independent auditing as and when required by the scheme Managing Agency and/or the respective government; and
  - To ensure equality between all scheme participants, the operations of the Managing Agency can also be independently audited. This is not only undertaken for transparency, but also to improve the operations of the scheme, including complaint handling process and container return facility management.

- The auditing of reported information is vital in ensuring that the Managing Agency is provided with clear and transparent information on scheme performance and financials, the requirements for which are often outlined in the scheme regulations (Section 16.5);
- Public reporting of key performance data by the agency responsible for scheme operations and performance, provides greater clarity and transparency on the efficiency of the scheme and increases the community's trust in the scheme and willingness to participate. In addition to communication of information to the public, the Managing Agency often publishes public information for producers and scheme operators (Section 16.6); and
- The responsibility of scheme participants, including the Managing Agency, is to perform their contractual obligations and report on the data, in the required format and timeframe, as is agreed to in their contractual agreement and in accordance with the scheme regulations. Specifically, the Managing Agency role and responsibility is to (Section 16.7):
  - track registered scheme containers;
  - minimise scheme fraud;
  - manage the roles of others to fulfil their legal obligations and report the correct information;
  - have complete transparency and visibility;
  - provide clear and transparent information on the efficiency and performance of the scheme; and
  - ensure clear ongoing communication is undertaken between all stakeholders.

Consequently, the reporting requirements for a NZ CRS is an important design component that will underpin the ability for the scheme Managing Agency and scheme Governance Board to accurately and transparently report on the scheme's performance. As such and acknowledging the interconnection between requirements for robust reporting and the range of scheme participants (including the consumer), the NZ CRS reporting design components will require the development of processes and procedures that reflect the operational differences for each scheme participant. Consequently, the NZ CRS Managing Agency will be the agency responsible for the development of the reporting processes and procedures whilst being supported and guided by the requirements as set out in the scheme regulations.

## 18.2 The New Zealand Container Return Scheme Design Component Recommendations

The intent of this section is to bring together the key NZ CRS design components as reported in the preceding 17 sections all of which have been reviewed by the Scheme Design Working Group (SDWG) and Technical Advisory Group (TAG). The feedback received from both the SDWG and TAG has been considered and where able, integrated into design components as presented on a section by section basis and which will be taken forward to the NZ CRS implementation stage.

For readability, the NZ CRS design components have been presented according to the design section and therefore, enabling the reader to cross reference back to the respective section should further clarification be required. This means that there will be instances where the same design component is reflected across several sections.

The following sections present the key NZ CRS design components.

### 18.2.1 Scope of Containers

Taking the outcomes of the research into account, including feedback from stakeholders involved in the NZ CRS design, the Project Team, on balance, are of the view that all single-use beverage containers as provided below will be included in the NZ CRS and that other containers (including kitchen and bathroom, laundry, garage and garden) could be included in the future (e.g., within the bespoke NZ CRS legislative instrument).

The following list of information summarises the key NZ CRS scope of container design components that will be taken forward to the implementation stage.

#### Eligible containers

- All single-use beverage containers (e.g., dairy, carbonated and non-carbonated soft drinks, fruit juices, alcohol and non-alcohol) to be included in the NZ CRS design.
  - The benefit of this approach is ensuring consumers have clarity in understanding what containers are included in the NZ CRS thereby reducing potential confusion and/or ambiguity regarding what containers are included in the NZ CRS.
- Eligible containers to include the following in all material types (e.g., PET, HDPE, LPB, glass) and container types (e.g., sachets, pouches, bottles):
  - Carbonated and non-carbonated soft drinks (including energy and sports drinks, cola and ready to drink cordials).
  - Fruit and vegetable juice (including coconut juice and fruit juice).
  - Alcoholic beverages (including beer, stout, ale, wine, cider and spirits).
  - Carbonated and mineral water (including sparkling and still water).
  - Dairy products (including white and flavoured milk and drinkable yoghurts (e.g., fermented dairy products)).
  - Include all single-use beverage containers to reduce consumer confusion.
  - The NZ CRS design to include all single-use beverage containers less than or equal to 4L in volume.
    - The benefit of this approach is as described above to provide consumers with a clear understanding of what containers are included in the NZ CRS thereby reducing potential confusion and/or ambiguity regarding what containers are included in the NZ CRS. Additionally, including all material and container types in the NZ CRS ensure all beverage producer participants are treated equitably regarding container material and type.
  - Sachets and pouches shall be introduced into the scheme within two (2) years of the scheme commencing.
    - The benefit of this approach is that this allows the NZ CRS to initially focus on the mainstream containers whereas sachets and pouches represent a minor volume only and will require a more specialised approach.
- All eligible scheme containers to be registered with the scheme Managing Agency. It will be deemed illegal for any eligible scheme containers not to be registered with the scheme and in such cases, penalties will apply and be determined by the court system (e.g., imprisonment and/or monetary fine). Criminal offences will be the responsibility of the New Zealand Police with commercial offences the responsibility of the particular Government authority (e.g., Inland Revenue Department).
  - The benefit of this approach is that all eligible scheme containers sold in Aotearoa New Zealand will be required to be registered with the scheme Managing Agency, be part of and contribute financially to the NZ CRS.

#### Ineligible containers

Ineligible containers include:

- Non single-use containers (including for example, bathroom, kitchen, laundry, garage, garden shed products), however, this does not preclude these types of containers from being included in the scheme in the future.
  - The reason for this approach is to initially focus the NZ CRS on single-use beverage containers which compliments other global schemes, while acknowledging that as the NZ CRS develops and matures, other container types can be included. The added benefit of this approach is to support New Zealand’s transition from a circular economy to a linear economy.
- The container return facility to have the discretion to reject containers based on material identification and in accordance with the requirements of the Managing Agency and NZ CRS legislative instrument, including but not limited to:
  - Broken containers.
  - Damaged but intact (e.g., a container that is returned to a container return facility that is so damaged or in such a condition that the scheme label and/or barcode and/or QR code and/or other scheme identification label cannot be verified or recognised).
  - Label missing but identifiable as an eligible container.
  - Contaminated with substances that make the container a health risk or unsuitable for recycling.
  - There are reasonable grounds that the container was not sold in Aotearoa New Zealand.
  - There are reasonable grounds that the container was part of a bale.
    - The benefit of this approach is to ensure that container return facilities provide the NZ CRS with the first line of contamination and fraud assessment supporting the collection and verification of material that meets the specific scheme conditions of acceptance.
- Suppliers that intend to sell (export) eligible containers outside of New Zealand will be eligible for a refund of the scheme deposit with the Managing Agency establishing and implementing appropriate mechanisms to accurately and transparently recorded export exemptions for audit and scheme compliance.
  - The reason why this is good for the NZ CRS is that those beverage containers to be exported from New Zealand will not be purchased and consumed by New Zealand consumers, and will not contribute to New Zealand’s recovered material volumes.

### Container conditions of acceptance

- All eligible containers to be labelled which may include a unique scheme label indicating the deposit amount and, for example, a barcode, and/or QR code, and/or security logo.
  - The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
- The unique scheme label indicating the deposit amount and, for example, a barcode, and/or QR code, and/or security logo must be legible to be accepted for a refund.
  - The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
- Eligible containers to be empty of contents and must not be contaminated with substances that make the container a health risk or unsuitable for recycling.
  - The benefit of this approach is to support the safety of those individuals directly handling the eligible containers and ensuring the collected scheme containers are of high quality to support recyclability of the material.
- Eligible containers must be whole (e.g., an eligible container that is not missing anything other than what a consumer may need to remove in order to consume the product), intact and not be

broken (e.g., broken glass bottle), however it may be crushed depending on the preferences of the container return facility and requirements as determined by the Managing Agency.

- The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
- Container lids to be removed by the consumer at the point of return.
  - The reason why this is beneficial to the NZ CRS is to ensure clean uncontaminated streams of material are received for processing. The lids are to be collected by the container return facility with the Managing Agency supporting recycling of lids via identified pathways.
- Establishment of appropriate import and export control measures to manage scheme fraud and general material flow within the economic system.
  - The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud. Additionally, it is acknowledged that global container return schemes commonly provide the beverage producer exemptions for exported products that are sold offshore and therefore will not be part of the respective container return scheme.
- At this stage of the NZ CRS design process and acknowledging SDWG feedback, refillables will not be included as an eligible scheme container and therefore will not be part of the NZ CRS design. However, the NZ CRS Managing Agency will promote and encourage the development of the refillables market (NOTE: further investigatory work regarding the Aotearoa New Zealand refillable market has been recommended in Section 17 to better understand how the NZ CRS can facilitate the refillable market) through options including, but not be limited to:
  8. Funding and promoting the benefit and awareness of refillables as a preferred choice to New Zealanders.
  9. Working closely with existing and future New Zealand refillable schemes to identify and remove barriers to their growth, irrespective of whether existing or future refillable schemes choose to be included within a NZ CRS or not. This approach recognises and provides for individual companies to manage and promote their own unique refillable containers and where companies may wish to share a universal bottle.
  10. Further to item 2, investment in, or funding of, infrastructure by addressing and removing barriers such as the return, re-washing and refilling of bottles.
  11. Ensuring that the method of return by customers is convenient, accessible and where appropriate and practicable is compatible with existing NZ CRS container return facilities.
  12. Establishment of NZ CRS container return facilities that, where practicable, can accept, sort and store for transportation both eligible single-use beverage containers and reusable beverage containers.
  13. Support and facilitate the uptake of reusables through the integration of strategic directives embedded within the NZ CRS scheme performance indicators.
  14. Securing the funding to achieve the above from the scheme fee.

## 18.2.2 Container Return Facilities

Taking the outcomes of the research into account and acknowledging the comprehensive feedback received from the SDWG co-design process, the Project Team on balance are of the view that, for optimum scheme performance, including supporting consumer convenience and accessibility, a range of container return facilities will be included in the NZ CRS design. Additionally, and on balance, the original proposal to include a voluntary return-to-retail option underpinned by a mandatory approach has been modified to reflect and acknowledge SDWG feedback specifically relating to the complexities that this type of arrangement would cause to the retail sector. As such, the Project Team has recognised this feedback and has included a voluntary return-to-retail option with no mandatory requirements.

This approach will require the scheme Managing Agency to have greater focus on achieving a win-win outcome with retailers.

The following list of information summarises the key NZ CRS container return facility design components that will be taken forward to the implementation stage.

### Customer Interface

- Convenience
  - Sufficient container return facilities will be located across Aotearoa New Zealand at suitable locations to enable customers to redeem their containers in a secure and efficient manner with minimal transaction times and at the same time ensure the return facilities are cost-effective and financially viable. Based on learnings from overseas, feedback from the design process and the outputs from financial modelling it is proposed that the NZ CRS initially establish 415 (i.e., a projected population of 5.213million as at 2023 and a ratio of 12,500 people per container return facility) registered container return facilities across Aotearoa New Zealand noting that each of the 415 registered sites are anticipated to have informal drop-off points located to increase customer convenience and provide additional volumes of containers to improve financial viability. The NZ CRS Managing Agency will be required to monitor the performance of each geographical area such as containers returned as a proportion of what is available in the area and take appropriate action as required. This action would include working with container return facilities, establishing more return sites and increasing awareness. It is further recommended that no later than 9-months before the scheme commences a final review is undertaken by the regulatory authority to confirm if the establishment of 415 container return facilities is still appropriate.
    - Ensuring sufficient access to collection points throughout Aotearoa New Zealand is important to ensure the NZ CRS provides a service to all New Zealanders regardless of where they reside (e.g., rural, urban, city) whilst also providing consumers a range of locations that they can access and use that compliments their day-to-day activities. At the same time, it is important that the collection point sites are financially viable and cost-effective.
  - A range of manual and automated container return facility types (e.g., RVM, manual collection depots, return-to-retail, community recycling network) and/or other means of collection (e.g., charity, marae or school collection) will be established to reflect the most appropriate collection solution that also factors in New Zealand's broad geography (e.g., rural, residential, central city areas).
    - A range of container return facility types is beneficial to Aotearoa New Zealand by providing consumers the option to choose how they would like to return their eligible containers, for example, through a self-service reverse vending machine through to direct person-to-person contact. Additionally, a range of facilities seeks to support, for example, wide scheme participation from a range of businesses, encourage business innovations and create employment opportunities.
  - Manual container return facilities. Note, these facilities may also provide for additional customer services (e.g., collection of other recyclable materials such as ineligible containers, paper and cardboard, scrap steel and household items for recycling) and additional kaitiakitanga whakanaonga - product stewardship schemes such as tyres, e-waste, Agrecovery containers).
    - The reason why this approach is good for Aotearoa New Zealand is to support broader resource recovery initiatives and to help New Zealand transition from a

circular economy to a linear economy. Further, providing for the additional above listed example customer services will provide consumers with an opportunity and pathway to return materials for recovery than what may have otherwise been disposed of to general refuse/landfill.

- Container refund options must include cash, electronic funds transfer, supermarket voucher (including, for example, a 2-year expiration date) and donation. The scheme Managing Agency will be empowered to have flexibility to expand the range of refund options such as a scheme credit system, loyalty card and gift cards). Alternative refund options must be supported by robust information (e.g., consumer surveys) and in consultation with the scheme Governance Board and the Government department responsible with scheme oversight.
  - The reason why this is good for New Zealanders is to provide consumers with a range of options to receive the appropriate container refund amount rather than limiting these options.
- Accessibility
  - Container return facility operating times to include after-hours (e.g., remaining open after 5.00 pm) and weekends (noting container return facility opening times may be influenced by region specific consenting requirements, for example, noise control).
    - The benefit of this approach is to provide consumers with a range of times to enable customers to conveniently return and redeem their containers, for example, after normal work hours.
  - The Managing Agency will give effect to ensuring that container return facilities are located strategically to promote customer convenience (e.g., supermarkets, petrol stations, co-located with community recycling facilities) and access points (e.g., transportation routes).
    - The benefit of this approach is to provide consumers with a convenient service that individuals can easily interact with while supporting, for example, local businesses (e.g., supermarkets, retail stores).
  - Container return facilities must provide for safe access (e.g., ramps versus steps) to a wide range of customers.
    - The reason why this is good for Aotearoa New Zealand is to ensure that all consumers have the opportunity and ability to access and interact with the NZ CRS.
- Engagement
  - Container return facilities must provide customers with scheme information, for example, scheme updates, in line with the marketing and communication requirements as determined by the Managing Agency and in bi-lingual and multi-lingual options.
    - The reason why this is good for the NZ CRS and Aotearoa New Zealand is to apply a consistent style of messaging across all registered scheme container return facilities supporting clear and transparent messaging to consumers. It is acknowledged that container return facilities may from time to time need to update consumers quickly on matters such as technology breakdowns but that in all cases, any change to a service provided by a scheme registered container return facility must be immediately raised with the Managing Agency to then determine whether additional public notification, for example, via the scheme website must be undertaken.

- The Managing Agency is required to give effect to ensuring and establishing consistent marketing of the container return facilities (e.g., marketing toolkit, standards) and scheme awareness.
  - The benefit of this approach to Aotearoa New Zealand is to ensure all scheme participants have a clear understanding of their role and responsibilities and have access to scheme information tailored to their specific role.
- Container return facilities must maintain records of eligible containers counted, refunds issued and/or undertake regular audits of collected materials to ensure scheme transparency.
  - The benefit of this is to ensure the scheme Managing Agency has complete visibility and transparency of the eligible containers moving throughout the scheme, as well as tracking scheme finances against eligible container count.
- The Managing Agency will be responsible for the procurement of scheme container return facilities, including the incorporation of social and indigenous procurement elements, (e.g., establishment of employment number targets for manual collection depots).
  - The reason why this approach is good for Aotearoa New Zealand is that the Managing Agency has the ability to manage all registered container return facilities under a consistent contractual arrangement setup which may include, for example, workplace employment targets.

### Container Return Facilities

- All container return facilities must be registered with the Managing Agency.
  - The benefit of this approach is primarily driven by the Managing Agency's ability to track registered scheme containers and scheme participants to minimise scheme fraud and maximise scheme compliance. Additionally, registration of container return facilities will enable the Managing Agency to provide the consumer with a consistent service managed, for example, through consistent branding and scheme messaging.
- The Managing Agency will be responsible for ensuring best practice design guidelines are established for all container return facilities, including health and safety, operating and environmental management principles.
  - The benefit of this approach for the NZ CRS and New Zealanders is to set the minimum requirements to be met by a container return facility, including construction requirements, scheme branding and messaging, to support the establishment of a scheme that provides a customer focussed experience and maximising scheme efficiencies.
- The NZ CRS design requires container return facilities to accept a minimum of two (2) streams of material (e.g., glass and other) followed by (if required) additional sorting technology at the container return facility or at another scheme location to ensure separation of materials into respective product/material types (i.e., glass colour separation, separation of plastics by type [e.g., PET, HDPE], liquid paperboard, aluminium/steel).
  - The reason for this approach is driven primarily to drive scheme efficacy and make the most of technology and transport logistics. The final number of minimum sorts will be confirmed during the NZ CRS implementation stage and will balance scheme financials with scheme efficiencies.



- Manual Container Return Facilities
  - Manual Collection Depot
    - Collection depots will cater for immediate counting and provision of customer refunds as stipulated by the Managing Agency (including cash, electronic funds transfer, supermarket voucher [including an appropriate expiration date], donation, scheme credit system, loyalty card, gift card) for eligible containers.
      - The benefit of this approach is that the depot can count and verify scheme eligible material returned by consumers and then refund the appropriate amount immediately with no time delay to the consumer.
    - Written container declarations to be completed by customers for containers over 1,500 containers (i.e., fraud prevention measures on stolen containers and in alignment with Australian schemes).
      - The benefit of this approach is to ensure that all scheme participants involved in the bulk collection of eligible scheme containers are registered within the scheme so that the scheme Managing Agency can manage, monitor and track collection activities and the numbers of containers being returned and deposits refunded through the scheme. Additionally, capping the number of eligible containers returned at any point in time influences tax avoidance by non-scheme registered individuals. The cap will be set at 1,500 containers for a cash deposit refund in alignment with the New South Wales, Queensland and Northern Territory container return schemes in Australia and subject to any specific New Zealand tax laws and scheme measures such as fraud mitigation and reporting requirements. Additionally, the option to include additional container cap numbers for specific container return facilities, for example, retail, will be considered during the NZ CRS implementation stage.
    - The maximum container return amount will be determined during the implementation phase for each type of container return facility (Manual Depot, Automated Depot and Return to Retail) and will balance container return efficiency and impact on existing business activities, particularly when considering return to retail points with limited storage capacity compared to a manual depot. Return to retail points will require site by site consideration to ensure that retail activities are not unduly disrupted by container return activities particularly when the return point is inside the retail operation, for example, inside a supermarket.
      - The benefit of this approach to the NZ CRS is ensuring that container return facilities are not unduly disrupted by container return activities.
    - Manual collection depot will have the option to refuse to accept a customer's containers where containers do not meet the container acceptance criteria as specified by the Managing Agency and included in the NZ CRS legislative instrument, including but not limited to:
      - Unclean or contaminated;
      - The refund marking is illegible or not visible;
      - Not labelled according to the NZ CRS scheme (e.g., were not sold in Aotearoa New Zealand); or
      - If a person refuses to complete a declaration when asked to do so by the depot operator.

- The benefit of this approach is to ensure that returned containers meet the scheme acceptance criteria in order to be eligible for the appropriate refund amount. Additionally, the acceptance criteria are a means for the scheme to monitor and manage fraudulent activities and supporting the collection of clean material for re-processing.
    - The Managing Agency will give effect to establishing clear processes, guidance for procuring and establishing container return facilities and Material Consolidation Facilities (see Section 7 for further discussion).
      - The reason this is good for the NZ CRS is to acknowledge container return facilities located in regional/remote areas of Aotearoa New Zealand where the cost of transporting unbaled scheme containers may prove to be financially inefficient.
  - Over-the-Counter Facility
    - The Managing Agency will give effect to promoting and encouraging the establishment of Over-the-Counter return locations in areas where other return facilities are not suitable, including but not limited to the following limitations:
      - Over-the-Counter returns limited to accepting small quantities (e.g., less than 100 eligible containers per customer).
      - Limit customer refund options to cash only or voucher for use in store.
      - Over-the-Counter conditions set by the Managing Agency (e.g., store location, minimum sales area, storage capacity, store security).
        - Incorporating an over-the-counter container return facility option into the NZ CRS will assist in providing consumers with an additional option to return containers to, while, for example, also supporting small communities in rural and/or remote locations to provide a convenient local service to their resident base.
  - Container Bag-Drop Facility
    - Bag-drop facilities will be included alongside a manual collection depot for customer convenience (i.e., service for those customers unable to wait for containers to be counted).
      - Providing a range of convenient return options to consumers is an important element in providing a scheme that is consumer focussed as the service will enable consumers that, for example, have limited time, to drop-off their containers to be counted, verified and refunded at a later time.
    - Bag-drop facilities will be required to supply specific bags (e.g., linked to registered collection depot, bag ID to track container transaction) for customers to collect and return eligible containers.
      - Providing bags with pre-labelled details will mean consumers have a dedicated collection method with the ability to track the progress of their transaction, including, for example, when their refund may be deposited into their selected account.
    - The Managing Agency will give effect to promoting and encouraging the provision for mobile and/or pop-up return facilities (e.g., events, service provision for Universities, schools, etc) to increase container recovery.

- Mobile and/or pop-up facilities will assist in providing localised services to areas where, for example, consumers may not have the ability and/or means to travel to another facility for a direct container count and refund or provide a bespoke collection service to activities that may require this.
- The Managing Agency will give effect to promoting and encouraging the unmanned mobile or pop-up facilities to offer the option of electronic funds transfer, or transfer of scheme credits to loyalty schemes or other options as appropriate. No cash to be provided.
  - The benefit of this option is to provide consumers with another option with which to return their eligible containers whilst supporting the Managing Agency to reduce, for example, theft of cash from unmanned facilities whilst still providing a convenient service to the consumer.
- Automated Container Return Facilities
  - Reverse Vending Machine
    - The Managing Agency will give effect to actively promoting the location of reverse vending machines to be connected to areas of customer convenience, for example:
      - Public transport facilities, bus inter changes, ferry terminals.
      - Education establishments including universities and schools.
      - Marae and Resource Recovery Centres.
      - Parks and nature reserves, barbecue areas.
      - Retail premises such as supermarkets, shopping malls, wholesale retailers.
      - Retail parking lots, major multi-storey parking lots.
      - Standalone (e.g., carparks) and/or inbuilt machines to accept eligible containers.
      - Acceptance of eligible containers by type (i.e., glass, plastic, aluminium/tin).
      - Machines to be of various sizes to cater to retail store specifications.
      - Consideration given to material compression and relationship to scheme fraud prevention measures.
      - Machines to provide marketing opportunities where sited (e.g., retail location, schools, local council main office).
        - The benefit of providing RVMs in a range of locations is primarily to provide the consumer with convenient options with which to return their eligible containers for the appropriate refund.
    - Containers will be accepted based on barcode scanning, materials or shapes, scheme logo, security logo (Note: eligible container acceptance connected to quality of container, fraud prevention measures and if a machine has the facility to compress containers). Minimum acceptance criteria will be determined during the implementation stage and will take advantage of new developments or innovations in technology to identify eligible containers.
      - The benefit of this approach is primarily driven by the Managing Agency's ability to track registered scheme containers and participants to minimise scheme fraud and maximise scheme compliance.

- The Managing Agency will, through contractual arrangements with container return facilities, give effect to ensuring that machines accepting both eligible and ineligible containers does not result in potential littering of rejected containers (NOTE: consideration must be given to potential misuse of machine as an alternative means of disposal).
  - The benefit of this approach is primarily driven to maximise consumer convenience whilst minimising the likelihood of litter disposal of those ineligible containers particularly where container return facilities are unmanned (e.g., mobile and/or pop-up facilities).
- The Managing Agency will give effect to promoting and provide for container return facilities focussed on donations only at locations such as bus/train/ferry stations, council main offices, zoos.
  - The benefit of this approach is primarily driven to maximise consumer convenience for those consumers who may wish to simply return containers with the appropriate refund to be allocated to a specific charity(ies) as supported by the facility (e.g., a RVM placed at a zoo with refunds to support zoo wildlife initiatives).
- The Managing Agency will, during the implementation phase, give effect to stipulating a maximum container limit for automated depots.
  - The reason why this is good for the NZ CRS and Aotearoa New Zealand is to provide additional infrastructure to manage large quantities of eligible containers that the container return facilities may otherwise not have the capacity to manage.
- The maximum container return amount will be determined during the implementation phase for each type of container return point (Manual Depot, Automated Depot and Return to Retail) and will balance container return efficiency and impact on existing business activities, particularly when considering return to retail points with limited storage capacity compared to a manual depot. Return to retail points will require site by site consideration to ensure that retail activities are not unduly disrupted by container return activities particularly when the return point is inside the retail operation, for example, inside a supermarket.
  - The benefit of this approach to the NZ CRS is ensuring that container return facilities are not unduly disrupted by container return activities.
- Return-to-retail is based on voluntary participation by retailers. For completeness this also applies to rural New Zealand.
  - The reason why this is good for New Zealand is that the current network of retail locations (e.g., supermarkets) provides consumers with a convenient number and choice of locations which may compliment day-to-day activities such as shopping, meaning eligible scheme containers can be returned at the same time. Under a voluntary approach it is for the Managing Agency to ensure the arrangements with retailers to host a container return facility represents a win-win outcome.
- Transportation of Material
  - The Managing Agency will be responsible for managing the establishment of collection service contracts (e.g., contracted back-haul arrangements) to deliver the service needed to transport eligible scheme containers from the container return facility to the scheme Material Consolidation Facility.

- The establishment of transportation service contracts will ensure that the NZ CRS benefits from a consistent service ensuring that eligible containers are moved efficiently between scheme participants.
  - The Managing Agency will be responsible for ensuring the utilisation of appropriate transportation logistics providers and/or back-haul arrangements are cost-effective and efficient and reduce the carbon footprint, including for remote/regional areas.
    - The benefit of this approach to Aotearoa New Zealand is to support New Zealand's goal to reduce greenhouse gas emissions and progress New Zealand's obligations under the Kyoto Protocol. The added benefit is to utilise existing infrastructure to support scheme activities whilst encouraging scheme employment.
- The Managing Agency shall give effect to the following: (these points should be specific to the container return facility only):
  - The establishment of appropriate fraud mitigation processes and procedures to manage and track the flow of eligible containers through the scheme (i.e., container return facilities, transportation to material processing facilities, transportation to re-processors and/or direct to end-markets).
    - The benefit of this is to ensure the scheme Managing Agency has complete visibility and transparency of the eligible containers moving throughout the scheme, as well as tracking scheme finances against eligible container count.
  - The Managing Agency may approve **baling** of scheme material (e.g., plastic, aluminium) on a case by case basis at selected container return facilities where it is demonstrated that these facilities would contribute to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. To achieve this, the Managing Agency will establish a scheme baling and audit process based on robust standards and procedures, including, for example, a contractual 'Baling Services Agreement' between the Managing Agency and the container return facility. This agreement will be supported by robust standards and procedures such as Standard Operating Procedures that the container return facility must contractually abide by. Additionally, the baling process will be standardised across the scheme so that the same baling process (i.e., weight and size of bale) is used at the container return facility and the scheme MCF ensuring consistency of methodology and minimisation of fraud.
    - The benefit presented by baling at container return facilities is the ability for the Managing Agency to use existing infrastructure whilst contractually managing the expansion of the facility's role and responsibility. Additionally, this approach will support the establishment of regional/remote New Zealand collection facilities to also bale and transport material to end-markets under contract with the Managing Agency, thereby improving scheme efficiencies such as transportation of loose material (i.e., payload efficiencies). Further, the Managing Agency is best placed to establish and manage the 'Baling Services Agreement' and the supporting Standard Operating Procedures in order to track scheme material and minimise fraud.
  - The Managing Agency will also approve **compaction** of scheme material (e.g., plastic, aluminium) at selected container return facilities where it is demonstrated that these facilities would contribute to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. To achieve this, the Managing Agency will determine the optimised compaction ratio that enables the scheme MCF to re-count and verify eligible scheme containers.

- The benefit of this approach is the ability of regional/remote Aotearoa New Zealand collection facilities to reduce costs associated with transporting materials to the scheme MCF. Further, the Managing Agency is best placed to manage setting compaction ratios in order to track eligible containers and minimise fraud.
- The Managing Agency will give effect to setting of an appropriate handling fee including reviews of the handling fee at intervals to ensure the viability of collection depots and scheme performance.
  - The reason why this is beneficial for Aotearoa New Zealand is primarily for the Managing Agency to compensate those scheme participants responsible for handling and sorting eligible containers and ensure that their respective activities remain profitable to ensure service continuation.
- All scheme material sold to markets will be owned by the Managing Agency.
  - The reason why this is good for Aotearoa New Zealand is that the Managing Agency is in the best position to manage this risk and promote the beneficial use of material over the long term. This is beneficial for the New Zealand environment as it will encourage the supply of scheme materials to New Zealand based manufacturers. The Managing Agency may, for example, enter long-term supply arrangement with material re-processors that results in certainty of supply to enable and assist investment in infrastructure.
- Revenue generated by the sale of eligible scheme material to be passed on via the Advanced Material Recycling Fee to beverage producers to reflect the choice of container materials used.
  - The reason why this is good for Aotearoa New Zealand is that the Managing Agency is in the best position to manage the risk and promote the beneficial use of material over the long term as well as share the benefit of this with both beverage producers and consumers. This is beneficial for the New Zealand environment as it will encourage the reuse of scheme materials with a priority focus on New Zealand based manufacturers.
- The Managing Agency will be responsible, through contractual arrangements, for ensuring container return facilities report key scheme performance data in keeping with scheme reporting requirements.
  - The benefit of this requirement to Aotearoa New Zealand is to ensure the container return facility provides to the Managing Agency clear and transparent information on the efficiency and performance of the scheme whilst highlighting areas of improvement.
- The Managing Agency is responsible for the integration of a separate financial accounting system and Information and Communications Technology (ICT) platform to manage scheme costs.
  - The benefit of this approach for a NZ CRS is to enable the Managing Agency to have complete transparency and visibility of containers received, processed, transported and the value of deposits issued to consumers as they relate to the successful functioning and performance of the scheme.

### 18.2.3 The Retailer

Taking the outcomes of the research into account, including feedback from stakeholders involved in the NZ CRS design, the Project Team, on balance, are of the view that the following retailer components will be included in the NZ CRS design and will be taken forward to the implementation stage:

- Return-to-retail is based on voluntary participation by retailers. For completeness this also applies to rural New Zealand.
  - The reason why this is good for New Zealand is that the current network of retail locations (e.g., supermarkets) provides consumers with a convenient number and choice of locations which may compliment day-to-day activities such as shopping, meaning eligible scheme containers can be returned at the same time. Under a voluntary approach it is for the Managing Agency to ensure the arrangements with retailers to host a container return facility represents a win-win outcome.
- Hospitality businesses (e.g., hotels, restaurants, bars, cafés and take-aways) will be included within the NZ CRS design with the Managing Agency responsible for establishing the specific scheme requirements for those businesses selling eligible scheme containers for both onsite and offsite consumption.
  - The benefit of this approach to the NZ CRS and New Zealand is to ensure those eligible scheme containers moving through hospitality businesses are recovered and recycled by the NZ CRS. Additionally, the Managing Agency is provided the flexibility to establish scheme specific arrangements, for example, collection of containers that support the ultimate success of the scheme.
- The Managing Agency is required to determine and implement the following:
  - The Managing Agency in consultation with the retail sector will establish a suitable transition period and deadline for compliance to help retailers transition old stock and ensure enough time is available to stock with eligible containers before the end of the transition period.
  - The purpose of a transition period to New Zealand retailers is to ensure retailers are provided enough time to adjust to scheme requirements including the transition from old stock to new stock and to establish new processes where needed. Trans-Tasman arrangement specific to movement of eligible containers including other relevant international arrangements (i.e., import and export considerations) without comprising the outcomes of the NZ CRS (e.g., the NZ deposit amount).
    - The reason why this is good for New Zealand is to ensure that all relevant legislation and regulations are assessed to ensure all legal components have been addressed and accounted for to support the implementation of the NZ CRS and the ultimate success of the scheme.
  - Determine the arrangements for leasing and/or purchasing RVMs.
    - The benefit of this approach is to enable retailers to potentially benefit from any contractual technology supply arrangements as established by the Managing Agency with relevant equipment providers.
  - Provision of marketing material and standards (e.g., marketing toolkit, Te Reo Māori and multi-lingual translations) to ensure consistent communications are established between retailer, scheme and customers.
    - The reason why this is good for the NZ CRS and New Zealand is to apply a consistent style of messaging across all participating retailers supporting clear and transparent messaging to consumers. Additionally, to ensure all scheme participants have a clear understanding of their role and responsibilities and have access to scheme information tailored to their specific role.
- Roles and Responsibilities
  - The Managing Agency will determine the specific return-to-retail contractual arrangements, which may include:
    - Recognising deposit labels and eligible containers.
    - Inspecting packaging and barcodes to ensure that they are intact.
    - Refunding the correct deposit amount.

- Sorting the collected containers correctly.
- Reporting requirements on the empty containers that they collect and refund.
- Recording of accounting, drop offs and collections.
- Additional costs on retailers.
- Site logistic requirements.
- Modification requirements to the retailer.
- Impacts on health and safety.
  - The reason why this approach is good for New Zealand is that the Managing Agency has the ability to manage all registered container return facilities (including return-to-retail) under a consistent contractual arrangement setup which may include, for example, site logistical requirements.

### 18.2.4 The Consumer

Taking the outcomes of the research into account, including SDWG feedback, the Project Team, on balance, are of the view that the design of a bespoke NZ CRS needs to be focussed on consumer convenience, engagement and accessibility. The following list of information summarises the key NZ CRS consumer design components that will be included in the NZ CRS design and will be taken forward to the implementation stage.

- The Managing Agency will be responsible for providing clear and accessible information to ensure consumers have a good understanding of the scheme, its kaupapa - purpose, its benefits to them, and where and how they can return eligible container.
  - The reason why this is good for the NZ CRS and New Zealand is to provide consumers with clear scheme information to support individuals to make informed decisions and choices whilst providing clarity on which single-use beverage containers are included in the scheme and which are not.
- The Managing Agency will be responsible for ensuring consumers have access to return their eligible containers in a secure, convenient and efficient manner with minimal wait and transaction times in keeping with best practice and at the same time ensure the return facilities are cost-effective and financially viable. Based on learnings from overseas, feedback from the design process and the outputs from financial modelling it is proposed that the NZ CRS initially establish 415 (i.e., a projected population of 5.213million as at 2023 and a ratio of 12,500 people per container return facility) registered container return facilities across Aotearoa New Zealand noting that each of the 415 registered sites are anticipated to have informal drop-off points located to increase customer convenience and provide additional volumes of containers to improve financial viability. The NZ CRS Managing Agency will be required to monitor the performance of each geographical area such as containers returned as a proportion of what is available in the area and take appropriate action as required. This action would include working with container return facilities, establishing more return sites and increasing awareness. It is further recommended that no later than 9-months before the scheme commences a final review is undertaken by the regulatory authority to confirm if the establishment of 415 container return facilities is still appropriate.
  - Ensuring sufficient access to collection points throughout New Zealand is important to ensure the NZ CRS provides a service to all New Zealanders regardless of where they reside (e.g., rural, urban, city) whilst also providing consumers a range of locations that they can access and use that compliments their day-to-day activities. At the same time, it is important that the collection point sites are financially viable and cost-effective.
- Container return facilities exist in each region that include after-hours options (e.g., open after 5pm) and weekends to enable customers to conveniently return their containers and obtain



their deposit refunds (noting container return facility opening times may be influenced by region specific consenting requirements, for example, noise control).

- The benefit of this approach is to provide consumers with a range of times to enable customers to conveniently return and redeem their containers, for example, after normal work hours.
- The Managing Agency will give effect to ensuring that container return facilities are located strategically to promote customer convenience (e.g., supermarkets, petrol stations, co-located with community recycling facilities) and access points (e.g., transportation routes).
  - The benefit of this approach is to provide consumers with a convenient service that individuals can easily interact with while supporting, for example, local businesses (e.g., supermarkets, retail stores).
- Container return facilities must provide for safe access (e.g., ramps versus steps) to a wide range of customers.
  - The reason why this is good for New Zealand is to ensure that all consumers have the opportunity and ability to access and interact with the NZ CRS.
- A flat-rate minimum deposit value will be applied to all eligible containers to ensure consumer engagement and make it worth their while and drive the desired behaviour change.
  - The reason why this is good for New Zealand is that a flat-rate deposit will simplify the scheme by providing equal incentive to consumers to return all containers, ensuring the scheme is fair to all producers and is simpler for the Managing Agency to administer. This avoids favouring the return of one container over another.
  - Container refund options must include cash, electronic funds transfer, supermarket voucher (including, for example, a 2-year expiration date) and donation. The scheme Managing Agency will be empowered to have flexibility to expand the range of refund options such as a scheme credit system, loyalty card and gift cards). Alternative refund options must be supported by robust information (e.g., consumer surveys) and in consultation with the scheme Governance Board and the Government department responsible with scheme oversight.
  - The benefit of providing New Zealanders with a range of options to receive the NZ CRS deposit refund ensures the scheme is fair to all and provides consumers with choice depending on current situations (e.g., job status, involvement in charities).
- The Managing Agency will be responsible for the establishment and ongoing implementation of a NZ CRS education and awareness plan including the provision of educational resources suitable for use in curriculum settings (e.g., interactive NZ CRS web portal).
  - The benefit of providing these NZ CRS educational resources to Aotearoa New Zealand is the ability to create increased social good within communities by encouraging and facilitating improved social connections between and within communities that also directly and indirectly drives awareness and support for the NZ CRS. Additionally, these educational resources may facilitate wider opportunities such as the establishment of a waste and resource management school curriculum.

### 18.2.5 Material Processing Facilities

Taking the outcomes of the research into account, including feedback from stakeholders involved in the NZ CRS design, the Project Team, on balance, are of the view that the following material processing facility components will be included in the NZ CRS design and will be taken forward to the implementation stage.

- The Managing Agency will contract the services of the Material Consolidation Facility, to a third party (e.g., an existing registered container return facility);

- The reason why this is appropriate for the NZ CRS design is that contracting the services of the scheme MCF by the Managing Agency will maximise the use of existing infrastructure, maximising the number of MCFs around Aotearoa New Zealand and minimising the scheme carbon footprint.
- It is recommended that each region in Aotearoa New Zealand (i.e., 16 regions) will have a dedicated MCF. There may be a requirement for more than one MCFs in a region where it is demonstrated that an additional MCF(s) would lead to improved scheme efficiencies such as transport savings without compromising increased risk of fraud.
  - It is envisaged that establishment of the scheme MCF network would include existing Territorial Local Authority (TLA) owned/contracted resource recovery infrastructure (e.g., resource recovery centres) which could be upgraded/converted to become an expansion of the NZ CRS MCF network.
- Where appropriate and practicable, the Managing Agency will give effect to prioritising the use of existing infrastructure in Aotearoa New Zealand to reduce scheme costs and maximise the opportunity for reuse. For clarity, the MCF and MRF will not be able to operate as one operation but will be able to be situated on the same land footprint with a clear delineation between the two entities such as fences and separate equipment to mitigate the risk of fraud.
  - Incorporating where possible, Aotearoa New Zealand's existing infrastructure (e.g., TLA owned/contracted resource recovery infrastructure), will assist in establishing a cost-efficient scheme whilst ensuring recognition of businesses already providing relevant services.
- The Managing Agency will give effect to the incorporation of direct and/or weight-based container counting methodology at scheme material processing facilities (i.e., MCF, MRF, general refuse processing facilities). There is no benefit to limit the options at this stage in the design process. The Managing Agency will have maximum flexibility on options that it determines is best for specific situations. A key area with manual method is a condition that regular auditing must be undertaken to ensure payments made to collection depots reflects the weight to count ratio.
  - Enabling the Managing Agency to have flexibility in specifying the scheme eligible container counting methodology will support a wider range of solutions based on available Aotearoa New Zealand infrastructure.
- The Managing Agency to give effect to the following:
  - The establishment of appropriate fraud mitigation processes and procedures to manage and track the flow of eligible containers through the scheme (i.e., container return facilities, transportation to material processing facilities, transportation to re-processors and/or direct to end-markets).
    - The benefit of this is to ensure the scheme Managing Agency has complete visibility and transparency of the eligible containers moving throughout the scheme, as well as tracking scheme finances against eligible container count.
  - The Managing Agency may approve **baling** of scheme material (e.g., plastic, aluminium) on a case by case basis at selected container return facilities where it is demonstrated that these facilities would contribute to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. To achieve this, the Managing Agency will establish a scheme baling and audit process based on robust standards and procedures, including, for example, a contractual 'Baling Services Agreement' between the Managing Agency and the container return facility. This agreement will be supported by robust standards and procedures such as Standard Operating Procedures that the container return facility must contractually abide by. Additionally, the baling process will be standardised across the scheme so that the same baling process

(i.e., weight and size of bale) is used at the container return facility and the scheme MCF ensuring consistency of methodology and minimisation of fraud.

- The benefit presented by baling at container return facilities is the ability for the Managing Agency to use existing infrastructure whilst contractually managing the expansion of the facility's role and responsibility. Additionally, this approach will support the establishment of regional/remote Aotearoa New Zealand collection facilities to also bale and transport material to end-markets under contract with the Managing Agency, thereby improving scheme efficiencies such as transportation of loose material (i.e., payload efficiencies). Further, the Managing Agency is best placed to establish and manage the 'Baling Services Agreement' and the supporting Standard Operating Procedures in order to track scheme material and minimise fraud.
- The Managing Agency may also approve **compaction** of scheme material (e.g., plastic, aluminium) at selected container return facilities where it is demonstrated that these facilities would contribute to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. To achieve this, the Managing Agency will determine the optimised compaction ratio that enables the scheme MCF to re-count and verify eligible scheme containers.
  - The benefit of this approach is the ability of regional/remote Aotearoa New Zealand collection facilities to reduce costs associated with transporting materials to the scheme MCF. Further, the Managing Agency is best placed to manage setting compaction ratios in order to track eligible containers and minimise fraud.
- The Managing Agency will be responsible for managing the establishment of collection service contracts and/or agreements (e.g., contracted back-haul arrangements, transportation of material by the material purchaser) to be managed by the Managing Agency to deliver the service needed to transport eligible scheme containers from the scheme Material Processing Facility and either the scheme Material Consolidation Facility, material re-processor or direct to end-markets.
  - The establishment of transportation service contracts will ensure that the NZ CRS benefits from a consistent transportation service.
- Establishing processes to audit scheme eligible glass container return rates collected via kerbside recycling collections to support appropriate MRF glass material handling fee claims.
  - Acknowledging the likelihood of glass breakage in kerbside collections, enabling the Managing Agency to audit kerbside collection bins for scheme eligible glass container return rates will benefit the NZ CRS by ensuring the Managing Agency can verify MRF claims.
- Establishing criteria to determine weight-based assessment, including the degree of accuracy required for scheme payments to be acceptable to parties.
  - The benefit to Aotearoa New Zealand is that the Managing Agency establishes a consistent weight-based assessment tool.
- Establishing a scheme MCF, MRF and General Refuse Processing Facility protocol, including all auditing requirements and determine a protocol review period.
  - The benefit of this approach for a NZ CRS is to enable the Managing Agency to have complete transparency and visibility of scheme material processing facility operations as they relate to the successful functioning of the scheme.
- Establishing a clear and consistent collection, quality control and auditing processes integrating all scheme participants to maintain material quality.

- The benefit of this approach to a NZ CRS is to ensure that the Managing Agency coordinates and manages all scheme participants to ensure integrity of the scheme to ensure accurate and auditable count of containers and payment to collection depots.
- Supporting the establishment of a revenue sharing arrangement (deposit or handling fee amount, including a transitional period) underpinned by clear guidelines (e.g., the default position could have the deposit shared 50/50 between the MRF and the Territorial Local Authority making sure no party is disadvantaged nor gains a windfall from the NZ CRS with any surplus returned to the ratepayer) between the local council and the MRF for eligible containers collected via kerbside recycling collections. It is recommended each Territorial Local Authority and MRF operator undertake their own negotiations (excluding the involvement of the Managing Agency) and reach agreement on revenue sharing as this recognises the different contractual arrangements that exist across New Zealand. It is also recommended that local authorities use the opportunity of recognising revenue from containers in the recycling bin to offset recycling collection costs incurred by ratepayers (e.g., realising savings through tendering, including, for example, greater collections per unit truck and recognition of these savings as a variable on customer rates). The reason for this is to incentivise the MRF operator to make all appropriate efforts to separate out eligible and redeem containers (in accordance with the scheme container acceptance criteria). Notwithstanding any contractual requirements between MRF operators and local councils it is recommended that a revenue sharing arrangement be established between the local council and the MRF. The revenue sharing arrangement is to be established and set at a level that will support kerbside recycling and incentivise the MRF to fund processing and maximise recovery of eligible containers.
  - As noted, the benefit to Aotearoa New Zealand is to ensure that scheme funds generated from council kerbside recycling collections is appropriately shared with the MRF in recognition of the respective contractual commitments and to incentivise continual operational improvements related to the collection and sorting of eligible scheme containers.
  - It is recommended that further detailed analysis is undertaken to determine if the revenue sharing is based on the deposit value or the handling fee, but not both. The detailed analysis would be undertaken to reflect the different collection types, MRF operations, capital investments and scale of these and financial viability across Aotearoa New Zealand to ensure the revenue sharing is fair and reasonable and does not result in unintended consequences or perverse outcomes for the NZ CRS.
  - The default position would be sharing of the deposit value.
- Requirements for refunds associated with eligible containers recovered from kerbside collected general refuse via waste transfer stations (i.e., those facilities that do not allow public refuse drop-off).
  - As noted in the above bullet point, the benefit to Aotearoa New Zealand is to ensure that scheme funds generated from council kerbside refuse collections is appropriately shared with the waste transfer station in recognition of the respective contractual commitments and to incentivise continual operational improvements related to the collection and sorting of eligible scheme containers to maximise recovery.
  - Maximising the recovery of eligible scheme containers that meet the conditions of acceptance as specified by the scheme requirements (e.g., clean, scheme barcode and/or logo is visible and legible).

- Ensuring all scheme material sold to markets will be owned by the Managing Agency.
  - The reason why this is good for Aotearoa New Zealand is that the Managing Agency is in the best position to manage this risk and promote the beneficial use of material over the long term. This is beneficial for the Aotearoa New Zealand environment as it will encourage the supply of scheme materials to Aotearoa New Zealand based manufacturers. The Managing Agency may, for example, enter long-term supply arrangement with material re-processors that results in certainty of supply to enable and assist investment in infrastructure.

### 18.2.6 The Material Re-Processor

Taking the outcomes of the research into account, including feedback from stakeholders involved in the NZ CRS design, the Project Team, on balance, are of the view that the following material re-processor components will be included in the NZ CRS design and will be taken forward to the implementation stage.

- The Managing Agency as owner of the recovered scheme material will give effect to the following:
  - Ensuring that all recovered scheme material is beneficially reused through measures such as legislative drivers, establishment of long-term contractual arrangements, encourage the use of scheme recycled material for the production of containers, ensure scheme material can have adequate quality to be used again for food packaging, undertake regular inspections of approved scheme re-processors ensuring that minimal scheme material is wasted.
    - The benefit of this approach to Aotearoa New Zealand is that the NZ CRS promotes a holistic end-to-end solution requiring the Managing Agency to take ownership and accountability of the end fate of scheme material and the Managing Agency is enabled to promote the outcomes of the pūnaha whakarōpū para - waste hierarchy.
  - Working with the material re-processor to optimise scheme collection and sorting methodologies to lift material quality.
    - The reason why this is good for Aotearoa New Zealand is to require scheme participants and associated industries to carry out more robust sorting and collection of materials to reduce contamination levels whilst encouraging the production of higher value products (e.g., PET flakes and PET pellets) for sale to markets and material re-processors.
  - Ensuring the Managing Agency controls and/or has full transparency of the end fate of scheme materials (i.e., closed loop system) via, for example, contractual relationships or competitive tendering processes with re-processors (e.g., long-term contracts, process to achieve market rates with known contracted parties), encouraging minimum scheme recycled material for the production of containers, re-purposing of materials, ensure scheme material can have adequate quality to be used again for food packaging, undertaking regular inspections of approved scheme re-processors ensuring that minimal scheme material is wasted.
    - The benefit to Aotearoa New Zealand is ensuring that scheme material is, where possible (noting recycled scheme material may also be sold and exported to offshore markets) recycled in a closed-loop cycle with the Managing Agency promoting the use of 'bottle to bottle' and 'can to can' processes, whilst promoting and supporting onshore material re-processing activities and investments in infrastructure.

- Optimising the establishment of contractual arrangements to include material end fate and recyclability requirements of scheme material.
  - The reason why this is good for Aotearoa New Zealand is that the Managing Agency will encourage and promote Extended Producer Responsibility through the use of an Advanced Material Recycling Fee to ensure producers cover the true cost to beneficially use their respective container materials. This approach will also help encourage producers to move to more recyclable materials, thereby promoting and delivering the objectives of the scheme.
- Undertaking regular audits and inspections of the material re-processor to ensure minimal scheme material is wasted and scheme material is recycled in accordance with contractual agreements.
  - The benefit of this approach for a NZ CRS is to enable the Managing Agency to have complete transparency and visibility of operations as they relate to the successful functioning of the scheme.
- Utilise back-haul transportation relationships where possible to reduce the carbon dioxide emissions from transporting scheme beverage containers to material re-processors or end-markets.
  - The benefit of this approach to Aotearoa New Zealand is to support Aotearoa New Zealand's goal to reduce greenhouse gas emissions and progress New Zealand's obligations under the Kyoto Protocol. The added benefit is to utilise existing infrastructure to support scheme activities whilst encouraging scheme employment.
- The Managing Agency will promote and encourage the development of the refillables market through options including, but not be limited to:
  1. Funding and promoting the benefit and awareness of refillables as a preferred choice to New Zealanders.
  2. Working closely with existing and future New Zealand refillable schemes to identify and remove barriers to their growth, irrespective of whether existing or future refillable schemes choose to be included within a NZ CRS or not. This approach recognises and provides for individual companies to manage and promote their own unique refillable containers and where companies may wish to share a universal bottle.
  3. Further to item 2, investment in, or funding of, infrastructure by addressing and removing barriers such as the return, re-washing and refilling of bottles.
  4. Ensuring that the method of return by customers is convenient, accessible and where appropriate and practicable is compatible with existing NZ CRS container return facilities.
  5. Establishment of NZ CRS container return facilities that, where practicable, can accept, sort and store for transportation both eligible single-use beverage containers and reusable beverage containers.
  6. Support and facilitate the uptake of reusables through the integration of strategic directives embedded within the NZ CRS scheme performance indicators.
  7. Securing the funding to achieve the above from the scheme fee.

### 18.2.7 The Container Manufacturer

Taking the outcomes of the research into account, including feedback from stakeholders involved in the NZ CRS design, the Project Team, on balance, are of the view that the following container manufacturer components will be included in the NZ CRS design and will be taken forward to the implementation stage.

- The Managing Agency will give effect to the following:
  - Implementation of a transition period to help ensure that container manufacturers are given enough time to make the necessary changes to their containers to comply with regulations.
    - The benefit of a transition period to New Zealand container manufacturers is to ensure manufacturers are provided sufficient time to adjust to scheme requirements, as requested by the beverage producers, and establish new processes where needed.
  - Require as part of contractual obligations and/or key contractual performance indicators with beverage producers, that:
    - Contractual negotiations support the provision of post-consumer recycled scheme material to local container manufacturers.
      - The reason why this is good for Aotearoa New Zealand is that the Managing Agency will encourage and promote Extended Producer Responsibility by requiring where appropriate (e.g., safe to consumers) container manufacturers to use recycled scheme material in the production of new containers.
    - Container manufacturers use and maximise the proportion of post-consumer recycled scheme material in the manufacturing of new containers as required by the beverage producers. The minimum proportion target of post-consumer recycled material to be based on best international practice.
      - The benefit to Aotearoa New Zealand is further investment and diversification in existing New Zealand re-processing capacity and encouragement in innovative solutions that support onshore employment opportunities.
    - Use of post-consumer recycled scheme material in container manufacture will be exempted if containers can be reused or refilled. The Managing Agency, working with the regulatory authority and industry to determine the number of times reuse and/or refill can occur to enact this exemption.
      - The reason why this is good for Aotearoa New Zealand is to encourage and facilitate further development and expansion of the refillable market.
  - Provision of information to clearly set out any specific labelling requirements to help ensure container manufacturers are compliant.
    - The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
  - Provision of information to container manufacturers including an online portal to access training material, courses and specific scheme information.
    - The provision of information resources to container manufacturers is beneficial to a NZ CRS as it will provide the platform to ensure the provision of consistent messaging and the ability to address concerns quickly and efficiently.
- Recommend regulations that stipulate technical specifications for containers manufactured or imported into Aotearoa New Zealand that give effect to maximising ōhanga āmiomio - circular economy outcomes and principles of kaitiakitanga whakanaonga - product stewardship are realised.
  - Taking on board the experiences and learnings from other countries, the benefit of this approach is to ensure container production and its impacts on the economy and environment is sustainable and reflects best practice.

Further, acknowledging SDWG feedback refillables will be excluded from the NZ CRS, however the NZ CRS design will support the promotion of the uptake of refillables and where possible encourage new opportunities for refilling which may include, but not be limited to:

1. Investment in, or funding of, infrastructure by addressing barriers such as the return, re-washing and refilling of bottles.
2. Working together with beverage companies to enable the method of return by customers is convenient and accessible.
3. Working together with beverage companies to promote refillables including awareness and education.
4. Working with beverage companies to promote both a universal and bespoke refillable bottle. Universal bottle here refers to a generic bottle that could be used by multiple beverage companies but each with their own unique label.

Promoting and encouraging the development of the Aotearoa New Zealand refillables market is in alignment with the three (3) key project outcomes as discussed in Section 1 and noted below:

1. Change the way New Zealand values beverage containers that will see increased recycling and new opportunities for refilling;
2. Reduce the volume of plastics and other container litter currently ending up in our awa - waterways, moana - marine environment, wāhi tūmatanui - public spaces and ruapara - landfills; and
3. Give effect to ōhanga āmiomio - circular economy outcomes and any future priority product guidelines.

### 18.2.8 The Beverage Producer

Taking the outcomes of the research into account, including feedback from stakeholders involved in the NZ CRS design, the Project Team, on balance, are of the view that the following beverage producer components will be included in the NZ CRS design and will be taken forward to the implementation stage.

The Managing Agency will give effect to the following:

- Stipulate clear conditions of acceptance criteria for beverage producers;
  - The reason why this is good for Aotearoa New Zealand is that the Managing Agency is driven to encourage and promote Extended Producer Responsibility by putting in place measures to influence material type whilst also ensuring consistent scheme acceptance criteria are met.
- Recommend appropriate container labelling requirements to be legislated and to include requirements for scheme verification such as a scheme logo, barcode and deposit amount.
  - The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
- Ensure all eligible beverage containers will be registered with the Managing Agency.
  - The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers (i.e., both imported and locally produced) and to minimise scheme fraud.
- Undertake regular reviews of beverage containers and materials by undertaking huringa mataora – life-cycle analyses of these in keeping with the economic, environmental, social and cultural outcomes of the NZ CRS design. Reviews shall be undertaken at a frequency of at least once per three years.
  - The benefit to Aotearoa New Zealand is that the huringa mataora – life-cycle analysis can assess the beverage production process including the production and/or



consumption of resources including knowledge of the energy consumption and carbon emissions associated, and where appropriate, the scheme can through appropriate processes and procedures seek to improve systems and processes.

- Implementation of a transition period for beverage producers to make the necessary changes to their containers in order to comply with the regulations. The implementation period shall not be less than 9-months.
  - The benefit of a transition period to Aotearoa New Zealand container manufacturers is to ensure manufacturers are provided sufficient time to adjust to scheme requirements and establish new processes where needed.
- Ensure contractual arrangements with beverage producers support the provision of minimum post-consumer recycled scheme material content in the manufacturing of new beverage containers.
  - The reason why this is good for Aotearoa New Zealand is that the Managing Agency will encourage and promote Extended Producer Responsibility by requiring container manufacturers to use recycled scheme material in the production of new containers in keeping with best international practice.
- Requirement for beverage producers to register eligible containers with the scheme in order to supply containers to the Aotearoa New Zealand market.
  - The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
- Determine the scheme costs and appropriate cost recovery fees including but not limited to a product registration fee and disposal fee. Provide appropriate incentives to promote and encourage the use of post-consumer recycled scheme material in the manufacture of new containers.
  - The reason why this is good for Aotearoa New Zealand is that the Managing Agency will encourage and promote Extended Producer Responsibility through the application of fees including an Advanced Material Recycling Fee encouraging container manufacturers to use recycled scheme material in the production of new containers.
- Provision of information to clearly set out any specific labelling requirements to help ensure beverage producers are compliant with scheme requirements.
  - The benefit of this approach to Aotearoa New Zealand is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
- Require beverage producers to provide the Managing Agency with monthly sales data (e.g., sales volumes) to track scheme containers placed on to the market and those eligible scheme containers returned.
  - The benefit of this approach to Aotearoa New Zealand is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
- Take all necessary steps and actions as required to ensure compliance by all beverage producers with the scheme requirements.
  - The benefit of this approach is primarily driven by the Managing Agency ensuring beverage producers comply with all scheme requirements including those as specified in the bespoke NZ CRS legislative instrument. This will ensure data transparency supporting a cost efficient and effective scheme is provided to consumers.

### 18.2.9 Scheme Financials

Taking the outcomes of the research into account, including feedback from stakeholders involved in the NZ CRS design, the Project Team, on balance, are of the view that, the NZ CRS financial model will be based on the principle that beverage producers are required to pay for the material that is supplied and sold to market as well as paying for any additional costs associated with recycling and beneficial use. Also, on balance, the Project Team are also of the view that scheme costs (i.e., deposit, scheme fee and

Advanced Material Recycling Fee) are passed through to the consumer at the point of purchase and that these costs are visible to the consumer (e.g., itemised on the shopping receipt).

It is also acknowledged that there is no standard formula to determine the appropriate deposit value for a particular container return scheme. Notwithstanding this, the NZ CRS design needs to land on an appropriate deposit value. To this end the Project Team considered the following:

- Deposit value for other well performing global container return schemes such as those in Europe;
- Feedback received from Australian government agencies, specifically, the deposit value of AUD10-cents was set too low;
- The outcomes of the March 2020 ConsumerNZ customer survey undertaken for the NZ CRS Project;
- Ensuring consumer engagement and motivation to recover and return containers – i.e., make it worthwhile for people to pick up containers;
- SDWG feedback; and
- Driving positive behaviour change

Notwithstanding the outcomes of the research and feedback received from the SDWG, the Project Team on balance consider the refund model to provide the consumer with a scheme that is more cost effective and efficient but that a refund model must be linked to strong scheme Governance and central government oversight (see Section 14 and Section 15 for further discussion on this matter). The reasons for the refund model include, but are not limited to, providing a smoother transition of price at the consumer level as the scheme establishes. Further, if however, it was decided by the Government of the day that the NZ CRS be controlled and managed by the beverage industry, it is then recommended that a deposit model is adopted. This is to ensure that the beverage industry are held accountable to ensuring container return rates meet and where possible exceed scheme targets as set in the bespoke NZ CRS legislative instrument.

Further, notwithstanding the original recommendation of a 20-cent deposit to be applied to the NZ CRS, on balance and taking into consideration feedback from stakeholders, the Project Team are of the view that the NZ CRS commence with a 10-cent deposit noting the following:

- The 10-cent deposit will be put in place subject to:
  - This being reviewed after 3-years (36-months) to align with the first scheme review period (see Section 13 and Section 14 for further discussion) with the deposit automatically increasing to 20-cents at year-5 (60-months) allowing for a 2-year (24-months) transition period if the 70%-year-3 (36-months) container return target is not met.
  - If the return rate does not reach 80% within 4-years (48-months) the deposit level will automatically increase to 20-cents at year-6 (72-months) allowing for a 2-year (24-months) transition period if the 80%-year-4 (48-months) container return target is not met.
  - The next deposit review will align with the 5-year (60-months) scheme review period with the deposit increasing to 20-cents if the 85%-year-5 (60-months) container return rate target is not met. Again, a 2-year (24-months) transition period will be provided for should this situation occur.
  - Thereafter, the deposit level will be reviewed every 5-years (60-months) to align with the regulated scheme review periods. The scheme review periods and the requirements for deposit level increases will be included in the bespoke NZ CRS legislative instrument.

- It is further recommended that no later than 9-months before the scheme commences a final review is undertaken by the regulatory authority to confirm the starting deposit rate of 10-cents per container is still appropriate.

It is also recommended that the deposit value is coupled with annual reviews undertaken by the Managing Agency to optimise scheme performance in keeping with what is achieved by other countries to ensure a minimum container rate of 85%.

In keeping with high performing countries and for completeness, in addition to the minimum eligible container return rate of 85%, it is also recommended that the NZ CRS design set an aspirational return rate target of  $\geq 95\%$  with appropriate legislative instrument drivers to support achieving the aspirational return rate target. Therefore, to summarise and in keeping with high performing countries, it is recommended that the NZ CRS design will set:

- An initial minimum container deposit of NZD10-cents;
  - A 10-cent deposit will be put in place for a period of no more than 3-years to align with the first scheme review period with the deposit increasing to 20-cents at year-5 allowing for a 2-year transition period if the 70%-year-3 container return target is not met. If the return rate does not reach 80% within 4-years (48-months) the deposit level will automatically increase to 20-cents at year-6 (72-months) allowing for a 2-year (24-months) transition period if the 80%-year-4 (48-months) container return target is not met. The next deposit review will align with the 5-year scheme review period with the deposit increasing to 20-cents if the 85%-year-5 container return rate target is not met. Again, a 2-year transition period will be provided for should this situation occur. Thereafter, the deposit level will be reviewed every 5-years to align with the regulated scheme review periods. The scheme review periods and the requirements for deposit level increases will be included in the bespoke NZ CRS legislative instrument. It is further recommended that no later than 9months before the scheme commences a final review is undertaken by the regulatory authority to confirm the starting deposit rate of 10-cents per container is still appropriate.
- An eligible container return rate of 85% target is applied to the NZ CRS with interim annual container return targets (set at the anniversary date of the NZ CRS) of 60%-year-1 (12-months), 65%-year-2 (24-months), 70%-year-3 (36-months), 80%-year-4 (48-months), 85%-year-5 (60-months) set for the first five (5) years of scheme operation. Thereafter, a return rate target of 85% will apply with an aspirational target of 95%; and
- An aspirational eligible container return rate of  $\geq 95\%$  supported by legislation that will require the minimum number of collection sites to increase from approximately 415 and enable the deposit level to be increased. Note: The Governance Board will be responsible for making recommendations to the Government of the day on what the minimum number of sites will be increased to and the appropriate increase in deposit level.

Legislative instruments will be required to enable this aspect of the NZ CRS design.

Taking the above key findings into account, including feedback from stakeholders involved in the NZ CRS design, the Project Team are of the view that the following scheme financial components will be included in the NZ CRS design and be taken forward to the implementation stage.

- Notwithstanding the mechanisms of the existing Waste Minimisation Act 2008, new NZ CRS specific legislative instrument will be required to enable the NZ CRS design and its goals to be fully realised.
  - The reason why this is good for Aotearoa New Zealand is that establishment of bespoke legislative instruments will be 'fit-for-purpose' enabling the success of the scheme to be

fully realised, rather than retrofitting into existing legislative instruments that will not enable the benefits of the scheme to be fully realised.

- The NZ CRS is a mandatory kaitiakitanga whakanaonga - product stewardship scheme that is designed and implemented to assist the Aotearoa New Zealand economy transition from a linear to ōhanga āmiomio - circular (make-use-return) economy.
  - The reason why this is good for Aotearoa New Zealand is that it will (i.e., acknowledging scheme design and associated guidelines) require everyone including the producer, brand owner, importer, retailer and consumer to take responsibility of the choices made and their impact on the environment.
- The specific container return scheme legislative instruments to set a minimum eligible container return rate of 85% target is applied to the NZ CRS with interim annual container return targets (set at the anniversary date of the NZ CRS) of 60%-year-1 (12-months), 65%-year-2 (24-months), 70%-year-3 (36-months), 80%-year-4 (48-months), 85%-year-5 (60-months) set for the first five (5) years (60-months) of scheme operation. Thereafter, a return rate target of 85% will apply with an aspirational target of 95%.
  - The benefit of this approach is to acknowledge the build-up period from scheme start to when the scheme reaches the optimal eligible container return rate and enable the Managing Agency to engage with consumers through measures including, for example, targeted scheme consumer marketing and engagement campaigns.
- Implementation of regulated scheme review periods comprising of two (2) initial scheme review periods to assess scheme performance and operation (e.g., eligible scheme container return rates, consumer accessibility) and strategic direction set at the end of the year-3 (36-months) and year-5 (60-months) financial periods, then every 5-years (60-months) thereafter.
  - The benefit of two (2) interim scheme review periods is to enable sufficient time for the scheme to build towards optimal performance and enable the Managing Agency to assess the schemes performance, including, for example, the interim annual container return rate targets and the accessibility of a consumer focussed network of container return facilities. Regarding the specific scheme review triggers such as the deposit level, the following will apply and align with the above interim annual container return targets - if the return rates does not reach 70% within 36-months, 80% within 48-months or 85% within 60-months, whichever occurs first, the deposit shall automatically be increased to NZD20-cents. This is on the basis that the Managing Agency has explored other improvements to scheme performance including but not limited to increasing scheme awareness and the number of collection sites (along with any increase to the container handling fee to ensure collection sites remain viable) to improve convenience. Notwithstanding the above, the recommended deposit fee of NZD10-cents shall be reviewed by the government regulatory authority (Manatū Mō Te Taiao - Ministry for the Environment) no later than 9-months prior to the scheme to confirm this as the correct starting deposit value.
- A flat-rate minimum deposit value will be applied to all eligible containers.
  - The reason why this is good for Aotearoa New Zealand is that a flat-rate deposit will simplify the scheme by providing equal incentive to consumers to return all containers, ensuring the scheme is fair to all producers and is simpler for the Managing Agency to administer. This avoids favouring the return of one container over another.
- A range of options for consumers to receive the deposit refund is provided for in the design of a NZ CRS, including cash, supermarket voucher (including, for example, a 2-year expiration date), donation, electronic funds transfer, other (e.g., scheme credit system, loyalty card, gift card). The scheme Managing Agency is to have flexibility to expand the range of refund options supported by robust information (e.g., consumer surveys) and in consultation with the scheme Governance Board and the Government department responsible with scheme oversight. The

Managing Agency to also determine whether container return facilities are to provide all or several options to the consumer.

- The benefit of providing New Zealanders with a range of options to receive the NZ CRS deposit refund ensures the scheme is fair to all and provides consumers with choice depending on current situations (e.g., job status, involvement in charities).
- The Managing Agency to give effect to the following:
  - Setting of an appropriate handling fee including reviews of the handling fee at intervals to be determined by the Managing Agency.
    - The reason why this is beneficial for Aotearoa New Zealand is primarily for the Managing Agency to compensate those scheme participants responsible for handling and sorting eligible containers and ensure that their respective activities remain profitable to ensure service continuation.
  - The Managing Agency may approve **baling** of scheme material (e.g., plastic, aluminium) at some container return facilities where it is demonstrated that these facilities would contribute to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. To achieve this, the Managing Agency will establish a scheme baling and audit process based on robust standards and procedures, including, for example, a contractual 'Baling Services Agreement' between the Managing Agency and the container return facility. This agreement will be supported by robust standards and procedures such as Standard Operating Procedures that the container return facility must contractually abide by. Additionally, the baling process will be standardised across the scheme so that the same baling process (i.e., weight and size of bale) is used at the container return facility and the scheme MCF ensuring consistency of methodology and minimisation of fraud.
    - The benefit presented by baling at container return facilities is the ability for the Managing Agency to use existing infrastructure whilst contractually managing the expansion of the facility's role and responsibility. Additionally, this approach will support the establishment of regional/remote New Zealand collection facilities to also bale and transport material to end-markets under contract with the Managing Agency, thereby improving scheme efficiencies such as transportation of loose material (i.e., payload efficiencies). Further, the Managing Agency is best placed to establish and manage the 'Baling Services Agreement' and the supporting Standard Operating Procedures in order to track scheme material and minimise fraud.
  - The Managing Agency may also approve **compaction** of scheme material (e.g., plastic, aluminium) at some container return facilities where it is demonstrated that these facilities would contribute to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. To achieve this, the Managing Agency will determine the optimised compaction ratio that enables the scheme MCF to re-count and verify eligible scheme containers.
    - The benefit of this approach is the ability of regional/remote Aotearoa New Zealand collection facilities to reduce costs associated with transporting materials to the scheme MCF. Further, the Managing Agency is best placed to manage setting compaction ratios in order to track eligible containers and minimise fraud.
  - Utilisation of appropriate transportation logistics providers and/or back-haul arrangements, including for remote/regional areas.
    - The benefit of this approach to Aotearoa New Zealand is to support New Zealand's goal to reduce greenhouse gas emissions and progress New Zealand's obligations under the Kyoto Protocol. The added benefit is to utilise existing

- infrastructure to support scheme activities whilst encouraging scheme employment.
- Implement appropriate anti-fraud measures including, for example, contractual obligations, auditing and verification and reporting to closely monitor and assess performance of the logistics companies involved in the scheme. Additionally, there is also a role for the scheme regulator (i.e., central government agency responsible for the NZ CRS) and/or police in legally enforcing the breaches of the law and regulations where relevant.
    - The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud and maximise scheme compliance (e.g., integrated IT and financial systems to track eligible and financial transactions).
  - Revenue generated by the sale of eligible scheme material to be passed on via the Advanced Material Recycling Fee to beverage producers to reflect the choice of container materials used.
    - The reason why this is good for Aotearoa New Zealand is that the Managing Agency is in the best position to manage the risk and promote the beneficial use of material over the long term. This is beneficial for the New Zealand environment as it will encourage the reuse of scheme materials to New Zealand based material re-processors.
  - Application of an Advanced Material Recycling Fee (AMRF) recognises that not all container packaging materials are equal with some more recyclable and valuable than others. In practice this means that materials that are difficult to recycle or problematic such as liquid paperboard may need to incur additional cost to see them successfully recycled in keeping with the outcomes of the NZ CRS design while other materials may receive a net income such as aluminium.
    - The reason why this is beneficial for Aotearoa New Zealand is that this in an open and transparent way to ensure container material choices by beverage producers are recognised and reflect any net cost or revenue that is expected to ultimately be passed on to the customer. Also, in keeping with the outcomes of the NZ CRS design, the non-financial impacts associated with container material choice must be factored in or at the very least provided for to help shape the direction and choice of container material in the future.
  - Fraud mitigation measures such as a specific scheme logo applied in a way so as to minimise fraud.
    - The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
  - Integration of a separate financial accounting system and Information and Communications Technology (ICT) platform to manage scheme costs.
    - The benefit of this approach for a NZ CRS is to enable the Managing Agency to have complete transparency and visibility as they relate to the successful functioning and performance of the scheme.
  - Reporting of key scheme performance data.
    - The benefit of this requirement to Aotearoa New Zealand is to ensure the Managing Agency provides clear and transparent information on the efficiency and performance of the scheme whilst highlighting areas of improvement.
  - Supporting the establishment of a revenue sharing arrangements (deposit or handling fee amount, including a transitional period) underpinned by clear guidelines (e.g., the default position could have the deposit shared 50/50 between the MRF and the Territorial Local Authority making sure no party is disadvantaged nor gains a windfall

from the NZ CRS with any surplus returned to the ratepayer) between the local council and the MRF for eligible containers collected via kerbside recycling collections. It is recommended each Territorial Local Authority and MRF operator undertake their own negotiations (excluding the involvement of the Managing Agency) and reach agreement on revenue sharing as this recognises the different contractual arrangements that exist across Aotearoa New Zealand. It is also recommended that local authorities use the opportunity of recognising revenue from containers in the recycling bin to offset recycling collection costs incurred by ratepayers (e.g., realising savings through tendering, including, for example, greater collections per unit truck and recognition of these savings as a variable on customer rates). The reason for this is to incentivise the MRF operator to make all appropriate efforts to separate out eligible and redeem containers (in accordance with the scheme container acceptance criteria).

Notwithstanding any contractual requirements between MRF operators and local councils it is recommended that a revenue sharing arrangement be established between the local council and the MRF. The revenue sharing arrangement is to be established and set at a level that will support kerbside recycling and incentivise the MRF to fund processing and maximise recovery of eligible containers.

- As noted, the benefit to Aotearoa New Zealand is to ensure that scheme funds generated from council kerbside recycling collections is appropriately shared with the MRF in recognition of the respective contractual commitments and to incentivise continual operational improvements related to the collection and sorting of eligible scheme containers.
- It is recommended that further detailed analysis is undertaken to determine if the revenue sharing is based on the deposit value or the handling fee, but not both. The detailed analysis would be undertaken to reflect the different collection types, MRF operations, capital investments and scale of these and financial viability across Aotearoa New Zealand to ensure the revenue sharing is fair and reasonable and does not result in unintended consequences or perverse outcomes for the NZ CRS.
- The default position would be sharing of the deposit value.

### 18.2.10 Extended Producer Responsibility and Kaitiakitanga Whakanaonga – Product Stewardship

Taking the outcomes of the research into account, including feedback from stakeholders involved in the NZ CRS design, the Project Team, on balance, are of the view that the following Kaitiakitanga Whakanaonga - Product Stewardship components will be included in the NZ CRS design and will be taken forward to the implementation stage.

- The NZ CRS is a mandatory kaitiakitanga whakanaonga - product stewardship scheme that is designed and implemented to assist the New Zealand economy transition from a linear economy to *ōhanga āmiomio* - circular (make-use-return) economy.
  - The reason why this is good for Aotearoa New Zealand is that it will (i.e., acknowledging scheme design and associated guidelines) require everyone including the producer, brand owner, importer, retailer and consumer to take responsibility for beverage containers and their impact on the *taiao* - environment.
- Implementation of regulated scheme review periods comprising of two (2) initial scheme review periods to assess scheme performance and operation (e.g., eligible scheme container return rates, consumer accessibility) and strategic direction set at the end of the year-3 and year-5 financial periods, then every 5-years thereafter.

- The benefit of two (2) interim scheme review periods is to enable sufficient time for the scheme to build towards optimal performance and enable the Managing Agency to assess the schemes performance, including, for example, the interim annual container return rate targets and the accessibility of a consumer focussed network of container return facilities.
- It is recommended that the specific New Zealand Container Return Scheme regulations provide for and give effect to the following:
  - Producer responsibility implemented at the level of individual producers to incentivise the design of products in keeping with the principles of Extended Producer Responsibility.
  - Stimulate and encourage innovations.
  - Take a full huringa mataora – life-cycle assessment approach (i.e., cradle to cradle).
  - Clearly define responsibilities for all NZ CRS scheme participants.
  - Regulations and performance standards that will see, for example, the use of minimum recycled content and encourage greater recovery and pull through demand of products and packaging (e.g., requirements on the use of minimum recycled content to encourage greater take-back of products and packaging).
  - Economic and market-based instruments including the application of the Advanced Material Recycling Fee for difficult to recycle materials.
    - The benefit to New Zealand provided for by a bespoke container return scheme regulation is to set clear, robust and performance driven requirements to ensure the success of the NZ CRS.
- Establishment of a single independent not-for-profit Managing Agency to manage the operations and performance of the NZ CRS.
  - The benefit of this approach is the ability for one (1) entity to take responsibility for the operations and performance of the NZ CRS coupled with providing clarity of roles and responsibilities to all scheme participants.
- The Managing Agency to give effect to the Kaitiakitanga Whakanaonga - Product Stewardship Responsibility by implementing the following:
  - The specific container return scheme legislative instruments to set a minimum 85% eligible scheme container return rate target and an aspirational eligible scheme container return rate target of 95% (including the establishment of drivers to achieve an aspirational target) against which the Managing Agency scheme performance will be held accountable.
    - Establishing targets for a minimum and an aspirational eligible container return rate means the scheme Managing Agency has set targets against which performance of the scheme can be measured and against which both Management (specifically the Managing Agency Chief Executive Officer) and Governance can be held to account.
  - Establish a risk and compliance monitoring programme.
    - The benefit of this approach is to ensure all scheme participants abide by the specific regulation requirements and any other operational and/or performance standards and/or requirements as established by the Managing Agency. Establishment of a risk and compliance monitoring programme will assist the Managing Agency to identify any operational and/or performance issues which may arise and implement remedial measures as required.
  - Establish and implement a transparent financial management system and Information and Communications Technology (ICT) platform including the management of any free-riding.



- The provision of a transparent financial accounting system which will benefit the NZ CRS by ensuring scheme finances are protected and managed so as to provide security of information. Managing free-riding will benefit Aotearoa New Zealand by requiring all eligible scheme containers and persons/organisations selling these containers to be registered thereby ensuring all sellers of eligible scheme containers are treated equally and comply with the NZ CRS requirements.
  - Provide clear and transparent reporting of scheme costs to consumers at the point of sale (e.g., visibility of all scheme costs on customer receipt and/or on the scheme website).
    - The benefit of this approach is ensuring consumers have complete transparency of the costs of products, the current deposit rate and the current scheme charges, i.e., the cost of recycling the purchased products. The additional benefit of this approach is the ability for the NZ CRS to facilitate greater public awareness of the kaupapa - principles of Extended Producer Responsibility and by extension greater engagement in environmental stewardship.
  - Promote and encourage the development of the refillables market through options including, but not be limited to:
    - Funding and promoting the benefit and awareness of refillables as a preferred choice to New Zealanders.
    - Working closely with existing and future New Zealand refillable schemes to identify and remove barriers to their growth, irrespective of whether existing or future refillable schemes choose to be included within a NZ CRS or not. This approach recognises and provides for individual companies to manage and promote their own unique refillable containers and where companies may wish to share a universal bottle.
    - Further to bullet 2, investment in or funding of, infrastructure to remove barriers such as the costs associated with the return, re-washing and refilling of bottles.
    - Ensuring that the method of return by customers is convenient and accessible and where appropriate and practicable is compatible with existing NZ CRS container collection return facilities.
    - Establishment of NZ CRS container return facilities that can accept, sort and store for transportation both eligible single-use beverage containers and reusable beverage containers.
    - Support and facilitate the uptake of reusables through the integration of strategic directives embedded within the NZ CRS scheme performance indicators.
    - Securing the funding to achieve the above from the scheme fee.

Promoting and encouraging the development of the Aotearoa New Zealand refillables market is in alignment with the three (3) key project outcomes as discussed in Section 1 and noted below:

1. Change the way Aotearoa New Zealand values beverage containers that will see increased hangarua - recycling and new opportunities for refilling;
2. Reduce the volume of plastics and other container litter currently ending up in our streams (i.e., awa – waterways), moana - marine environment, wāhi tūmatanui - public spaces and ruapara - landfills; and
3. Give effect to ōhanga āmiomio - circular economy outcomes and any future priority product guidelines.

### 18.2.11 Legal Framework

Taking the outcomes of the research into account, including feedback from stakeholders involved in the NZ CRS design, the Project Team, on balance, are of the view that the following legal components will be included in the NZ CRS design and will be taken forward to the implementation stage.

- Notwithstanding the mechanisms of the existing Waste Minimisation Act 2008, new CRS specific legislative instruments will be required to enable the NZ CRS design and its goals to be fully realised.
  - The reason why this is good for Aotearoa New Zealand is that the establishment of bespoke NZ CRS legislative instruments that are 'fit-for-purpose' will enable the benefits of the scheme to be fully realised.
- The NZ CRS is a mandatory kaitiakitanga whakanaonga - product stewardship scheme that is designed and implemented to assist the Aotearoa New Zealand economy transition from a linear to ōhanga āmiomio - circular (make-use-return) economy.
  - The reason why this is good for Aotearoa New Zealand is that it will (i.e., acknowledging scheme design and associated guidelines) require everyone including the producer, brand owner, importer, retailer and consumer to take responsibility for beverage containers and their impact on the taiao - environment.
- Appropriate anti-fraud measures including, for example, contractual obligations, auditing and verification and reporting to closely monitor and assess participants involved in the performance of the scheme.
  - The benefit of this approach is primarily driven by the Managing Agency's ability to track registered scheme containers and participants to minimise scheme fraud and maximise scheme compliance.
- Fraud mitigation measures, including but not limited to, a specific scheme logo and other emerging technologies (e.g., data dots, block chain) applied in a way so as to further minimise fraud.
  - The benefit of this approach is primarily driven by the Managing Agency's ability to track registered scheme containers and participants to minimise scheme fraud.
- Fraud mitigation measures such as a cap on the number of eligible scheme containers returned at any point in time by non-scheme registered individuals.
  - The benefit of this approach is to ensure that all scheme participants involved in the bulk collection of eligible scheme containers are registered within the scheme so that the scheme Managing Agency can manage, monitor and track collection activities and the numbers of containers being returned and deposits refunded through the scheme. Additionally, capping the number of eligible containers returned at any point in time influences tax avoidance by non-scheme registered individuals. The cap will be set at 1,500 containers in alignment with the New South Wales, Queensland and Northern Territory container return schemes in Australia and subject to any specific Aotearoa New Zealand tax laws and scheme measures such as fraud mitigation and reporting requirements. Additionally, the option to include additional container cap numbers for specific container return facilities, for example, retail, will be considered during the NZ CRS implementation stage.
- Determine the maximum container return amount to be considered across the three envisaged return point scenarios (Manual Depot, Automated Depot and Return to Retail) with an emphasis on striking a balance between container return efficiency and impact on existing business activities, particularly when considering return to retail points. It may be the case that return to retail points will require site by site consideration to ensure that retail activities are not unduly

disrupted by container return activities particularly when the return point is inside the retail operation, for example, inside a supermarket.

- The benefit of this approach to the NZ CRS is ensuring that container return facilities are not unduly disrupted by container return activities.
- A separate financial accounting system and Information and Communications Technology (ICT) platform to manage scheme costs.
  - The benefit of this approach for a NZ CRS is to enable the Managing Agency to have complete monitoring transparency and data visibility as they relate to the successful functioning and performance of the scheme both operationally and financially.
- Revenue generated by the sale of eligible scheme material to be passed on via the Advanced Material Recycling Fee to beverage producers to reflect the choice of container materials used.
  - The reason why this is good for Aotearoa New Zealand is that the Managing Agency is in the best position to manage the risk and promote the beneficial use of material over the long term. This is beneficial for the Aotearoa New Zealand taiao - environment as it will encourage the whakamahi anō - reuse of scheme materials with a priority focus on Aotearoa New Zealand based manufacturers.
- Reporting of key scheme performance data including but not limited to monthly rolling average data of scheme performance (operational, fiscal, health and safety, customer satisfaction) and container return rate targets, or other reporting time period to align with, for example, contractual key performance indicator measures.
  - The benefit of this requirement to Aotearoa New Zealand is to ensure the Managing Agency provides clear and transparent information on the efficiency and performance of the scheme whilst highlighting areas of improvement.
- Implementation of regulated scheme review periods comprising of two (2) initial scheme review periods to assess scheme performance and operation (e.g., eligible scheme container return rates, consumer accessibility) and strategic direction set at the end of the year-3 and year-5 financial periods, then every 5-years thereafter.
  - The benefit of two (2) interim scheme review periods is to enable sufficient time for the scheme to build towards optimal performance and enable the Managing Agency to assess the schemes performance, including, for example, the interim annual container return rate targets and the accessibility of a consumer focussed network of container return facilities.
- Inclusion of regulated incentives for all scheme participants that do not comply with or meet the requirements of the bespoke NZ CRS legislative instrument.
  - The benefit of this requirements is to ensure all scheme participants (including the Managing Agency) are held accountable to ensuring the ultimate success of the NZ CRS.
- Inclusion of the regulatory powers required to be in place that underpins and ensures the successful delivery and enforcement of the CRS.
  - The reason why this is good for Aotearoa New Zealand is that the establishment of bespoke NZ CRS legislative instruments that are 'fit-for-purpose' will enable the benefits of the scheme to be fully realised.

### 18.2.12 Scheme Managing Agency Organisational Form

The Managing Agency structural arrangement will have a pivotal role in the ultimate success of the NZ CRS operation and performance to consistently deliver a consumer focussed scheme and strive to make the scheme as cost efficient as possible whilst continually improving on and reporting against the schemes social, economic, cultural and environmental objectives. The final position on the Managing Agency structural arrangement (e.g., Executive Management Team supported by Regional Coordinators) and its legal status (e.g., not-for-profit, charity, private, trust) will be undertaken during the NZ CRS implementation stage.

Regardless of the Managing Agency structural arrangement, accounting for SDWG feedback and Technical Advisory Group (TAG) feedback, the Project Team, on balance, are of the view that a key function of the Managing Agency will be to provide the day-to-day operational and performance management to ensure the scheme meets consumer and scheme participant expectations, as well as regulated requirements.

Notwithstanding the Managing Agency structural arrangement, taking the above key findings into account and the NZ CRS design components already reported in previous sections, the Project Team are of the view that the following Managing Agency components will be included in the NZ CRS design and will be taken forward to the implementation stage.

- The Managing Agency will be established as a single independent, government appointed Governance Board, not-for-profit organisation supported by clear regulatory conditions including consequences for not delivering on the minimum container return rate target of 85% and to strive towards the aspirational container return target of 95% (including the establishment of drivers and levers to achieve the aspirational target such as level of deposit). Consequences include, but are not limited to, the government:
  - Replacing one (1) or more of the scheme Governance Board members; and
  - Increasing the level of container deposit (e.g., an increase of 10-cents).
    - The benefit of this approach is the ability for one entity to take responsibility for the operations and performance of the NZ CRS coupled with providing clarity of roles and responsibilities to all scheme participants. Establishing targets for a minimum and an aspirational eligible container return rate means the scheme Managing Agency and scheme Governance Board have set targets against which performance of the scheme can be measured and against which both management (specifically the Managing Agency Chief Executive Officer) and governance functions can be held to account.
- The independent not-for-profit Managing Agency organisation will comprise of an Executive Management Team comprising senior managers of the organisation, including but not limited to, the Chief Executive Officer, Financial Manager, Operating Manager, Marketing and Communications Manager, Sustainability/Environment Manager, Audit and Risk Manager, Community and Social Enterprise Manager, Collection Facility Manager, Mana Whenua Relationship Manager (noting that relationships with Mana Whenua will be interconnected throughout the NZ CRS with the Managing Agency and scheme Governance Board accountable for achieving this).
  - The benefit of this approach is that the operation and performance of the NZ CRS is managed by a dedicated Executive Management Team comprising employees directly involved in the day-to-day operational performance of the scheme. The Executive Management Team representatives will be experienced (e.g. commercial acumen) in and have active working knowledge of all aspects of their respective operational areas, including areas for improvement, any risks and/or opportunities.
- The independent not-for-profit Managing Agency organisation will comprise an Operations Team responsible for fulfilling the day-to-day scheme activities comprising for example, Logistics Manager, Audit and Compliance Manager, Finance Manager, IT Manager, Communications Manager, Community Engagement Manager, Regional Coordinator Manager.
  - The benefit of this approach is that the day-to-day scheme activities are managed by a dedicated Operations Team comprising employees directly involved in fulfilling the duties of the scheme.
- The Managing Agency employees, including the Chief Executive Officer will be independent of any individual or organisation involved with the scheme Governance Board and must not own, be employed by or have any involvement in any organisation that is financially gaining from the

NZ CRS. Any family, relatives, etc that are employed by the scheme Managing Agency and where such relationships exist must be fully disclosed and approved by the scheme Governance Board and not at the discretion of the Managing Agency Chief Executive Officer to approve.

- Establishment of independence between the Management and Governance functions of the Managing Agency will ensure avoidance of any undue influence by a vested interest and confidence that information available to the Managing Agency is held in confidence for the purposes of operating the NZ CRS only.
- Full transparent tender processes with probity oversight to be in place for all Managing Agency procurement processes, for example, the access to the sale of recyclable scheme material.
  - Ensuring robust procurement and probity processes are in place will ensure the Managing Agency will undertake procurement activities in an open and fair environment to ensure all potential suppliers are given impartial and equitable treatment.
- Acknowledging the potential make-up of the Managing Agency, clear processes will be established to manage and protect all commercial information and/or data that is confidential and/or sensitive to competitors market activities.
  - Establishment of a clear process and or individual employee contracts specifically restricting the use of commercial and/or sensitive information and/or data will ensure scheme participants have confidence that commercially sensitive information will be used for scheme purposes only.
- The specific container return scheme legislative instruments to set a minimum 85% eligible scheme container return rate target and an aspirational eligible scheme container return rate target of 95% (including the establishment of drivers to achieve the aspirational target) against which the Managing Agency scheme performance will be held accountable.
  - Establishing targets for a minimum and an aspirational eligible container return rate means the scheme Managing Agency has set targets against which performance of the scheme can be measured and held to account.
- The specific container return scheme legislative instruments to set a minimum eligible container return rate of 85% target is applied to the NZ CRS with interim annual container return minimum targets (set at the anniversary date of the NZ CRS) of 60%-year 1, 65%-year 2, 70%-year 3, 80%-year 4, 85%-year 5 set for the first five (5) years of scheme operation.
  - The benefit of this approach is to acknowledge the build-up period from scheme start to when the scheme reaches the optimal eligible container return rate and enable the Managing Agency to engage with consumers through measures including, for example, targeted scheme consumer marketing and engagement campaigns.
- Implementation of regulated scheme review periods comprising of two (2) initial scheme review periods to assess scheme performance and operation (e.g., eligible scheme container return rates, consumer accessibility) and strategic direction set at the end of the year-3 and year-5 financial periods, then every 5-years thereafter.
  - The benefit of two (2) interim scheme review periods is to enable sufficient time for the scheme to build towards optimal performance and enable the Managing Agency to assess the schemes performance, including, for example, the interim annual container return rate targets and the accessibility of a consumer focussed network of container return facilities.
- Scheme review trigger. The following will apply and align with the above interim annual container return targets - if the return rates does not reach 70% within 36-months, 80% within 48-months or 85% within 60-months, whichever occurs first.
  - The deposit shall automatically be increased to NZD20-cents. This is on the basis that the Managing Agency has explored other improvements to scheme performance including but not limited to increasing scheme awareness and the number of collection

- sites (along with any increase to the container handling fee to ensure collection sites remain viable) to improve convenience.
- Notwithstanding the above, the recommended deposit fee of NZD10-cents shall be reviewed by the government regulatory authority (Manatū Mō Te Taiao - Ministry for the Environment) no later than 9-months prior to the scheme to confirm 10-cents as the correct starting deposit value.
  - Annual reviews of the Managing Agency will be undertaken by the respective central government department responsible for 'owning' the NZ CRS.
    - The benefit of this approach is to ensure the Managing Agency is held accountable for the performance and operation of the scheme with appropriate financial incentives, for example, to meet and where possible exceed set targets.
  - Implement appropriate anti-fraud measures including, but not limited to, contractual obligations, auditing, verification and reporting to closely monitor and assess performance of participants involved in the scheme. Additionally, there is also a role for the scheme regulator (i.e., central government agency responsible for the NZ CRS) and/or police in legally enforcing the breaches of the law and regulations where appropriate.
    - The benefit of this approach is primarily driven by the Managing Agency's ability to track registered scheme containers and participants to minimise scheme fraud and maximise scheme compliance (e.g., integrated IT and financial systems to track eligible and financial transactions).
  - Fraud mitigation measures such as a maximum cap on the number of eligible scheme containers returned at any point in time by non-scheme registered individuals.
    - The benefit of this approach is to ensure that all scheme participants involved in the bulk collection of eligible scheme containers are registered within the scheme so that the scheme Managing Agency can manage, monitor and track collection activities and the numbers of containers being returned and deposits refunded through the scheme. Additionally, capping the number of eligible containers returned at any point in time influences tax avoidance by non-scheme registered individuals. The cap will be set at 1,500 containers for a cash deposit refund in alignment with the New South Wales, Queensland and Northern Territory container return schemes in Australia and subject to any specific Aotearoa New Zealand tax laws and scheme measures such as fraud mitigation and reporting requirements. Additionally, the option to include additional container cap numbers for specific container return facilities, for example, retail, will be considered during the NZ CRS implementation stage.
  - The maximum container return amount will have to be considered across the three envisaged return point scenarios (Manual Depot, Automated Depot and Return to Retail) with an emphasis on striking a balance between container return efficiency and impact on existing business activities, particularly when considering return to retail points. It may be the case that return to retail points will require site by site consideration to ensure that retail activities are not unduly disrupted by container return activities particularly when the return point is inside the retail operation, for example, inside a supermarket.
    - The benefit of this approach to the NZ CRS is ensuring that container return facilities are not unduly disrupted by container return activities.
  - Risk and compliance measures, including but not limited to, auditing of scheme participants and adopting best practice methodology carried out in a way so as to minimise fraud.
    - The benefit of this approach is primarily driven by the Managing Agency to monitor scheme participant compliance with scheme requirements to minimise scheme fraud.
  - Revenue generated by the sale of eligible scheme material to be passed on via the Advanced Material Recycling Fee to beverage producers to reflect the choice of container materials used.

- The benefit of this approach is that the Managing Agency is in the best position to manage the risk and promote the beneficial use of material over the long term. This is beneficial for the New Zealand environment as it will encourage the reuse of scheme materials with a priority focus on New Zealand based manufacturers.
- Reporting of key scheme performance data including but not limited to monthly rolling average data of scheme performance (e.g., operational, fiscal, health and safety, customer satisfaction) and container return rate targets, or other reporting time period to align with, for example, contractual key performance indicator measures.
  - The benefit of this approach is to ensure the Managing Agency provides clear and transparent information on the efficiency and performance of the scheme whilst highlighting areas of improvement.
- A range of options for consumers to receive the deposit refund is provided for (e.g., manual container return facilities, RVMs) in the design of a NZ CRS, including cash, supermarket voucher (including, for example, a 2-year expiration date), donation, electronic funds transfer, other (e.g., scheme credit system, loyalty card, gift card). The scheme Managing Agency is to have flexibility to expand the range of refund options supported by robust information (e.g., consumer surveys) and in consultation with the scheme Governance Board and the Government department responsible with scheme oversight. The Managing Agency to also determine whether container return facilities are to provide all or several options to the consumer.
  - The benefit of providing New Zealanders with a range of options to receive the NZ CRS deposit refund ensures the scheme is fair to all and provides consumers with choice depending on current situations (e.g., employment status, involvement in charities).
- The Managing Agency will be responsible for the incorporation of social and indigenous procurement elements (e.g., establishment of employment number targets for manual collection depots) in all relevant scheme related contractual requirements.
  - The benefit of this approach is that the Managing Agency can set social targets to support, for example, indigenous employment opportunities.
- The Managing Agency will be responsible for the establishment and ongoing implementation of a NZ CRS education and awareness plan including the provision of educational resources suitable for use in curriculum settings (e.g., interactive NZ CRS web portal).
  - The establishment of a scheme specific education and awareness plan will support the NZ CRS to provide the Aotearoa New Zealand community with more than simply a container recycling scheme. Instead the provision of NZ CRS educational resources will encourage and promote the social good within Aotearoa New Zealand communities that also directly and indirectly drives awareness of and support for the NZ CRS. Additionally, these educational resources will, in a post-COVID-19 economy the ability to provide Aotearoa New Zealand communities and individuals with opportunities to diversify skills and provide a mechanism to develop new and/or additional life skills that enhance opportunities to participate in Aotearoa New Zealand's economy.
- The roles and responsibilities, including Managing Agency review periods will be set in the specific container return scheme legislative instruments.
  - Setting the roles and responsibilities of the Managing Agency in the New Zealand Container Return Scheme legislative instruments will provide transparency and accountability to the Managing Agency. Ultimately, the Managing Agency is responsible for the operational and performance success of the NZ CRS and so their specific roles and responsibilities need to be clearly established within the legislative instruments.
- The Managing Agency to ensure all scheme participants (including the general public) comply with relevant legislation, for example, health and safety.
  - The benefit of this approach is to ensure all scheme participants are aware of and meet their obligations as per relevant legislation. Further, the Managing Agency is to ensure

that all scheme participants (e.g., container return facilities) have established approved health and safety plans to ensure the safety of all persons engaged in the NZ CRS (including the general public accessing and engaging with container return facilities).

### 18.2.13 Scheme Governance Board

The final position on the Governance Board structural arrangement (e.g., integrated within the Managing Agency) and its legal status (e.g., not-for-profit, charity, private, trust) will be undertaken during the NZ CRS implementation stage. The reason for this is the Governance Board structural arrangement has a pivotal role in the ultimate success of the scheme by ensuring robust, independent and diverse strategic direction is provided to the Managing Agency to sustain scheme performance, motivate continual scheme improvements and ensure Managing Agency accountability against strategic objectives.

Regardless of the Managing Agency structural arrangement, accounting for SDWG feedback and Technical Advisory Group (TAG) feedback, the Project Team, on balance, are of the view that a key function of the Governance Board will be to provide the strategic directives to the Managing Agency to support the schemes operation and goals as well as community and environmental based initiatives.

Notwithstanding the Governance Board structural arrangement, taking the key research findings into account, the Project Team are of the view that the following scheme Governance Board components will be included in the NZ CRS design and will be taken forward to the implementation stage.

- The Governance Board will comprise 9-government appointed members (including an Independent Board Chair and representation from, but not limited to, Iwi, recyclers, financial, regulatory, customer, retail, community, waste sector, local government, beverage, experienced strategists and other stakeholders as well as the Managing Agency Chief Executive Officer) and be aligned to the representation of the Te Tai Ōhanga – The Treasury Living Standards Framework (i.e., Natural Capital, Social Capital, Human Capital and Financial/Physical Capital), including upholding Te Tiriti o Waitangi – The Treaty of Waitangi.
  - The benefit to the NZ CRS of a 9-member Governance Board includes, but is not limited to, the ability for different industry groups to be represented. Notwithstanding the diverse make-up of the governance board, members are selected for the skills and experience and expertise they bring.
- The scheme Governance Board will be established separate from the scheme Managing Agency Executive Management Team and comprise skills, experience and expertise from, for example, Iwi, recyclers, financial, regulatory, customer, retail, community, waste sector, local government, beverage, experienced strategists and other stakeholders as well as the Managing Agency Chief Executive Officer to ensure that schemes strategic direction is underpinned by social, economic, cultural and environmental outcomes.
  - The benefit of this approach is that representatives of the scheme Governance Board will be independent of (i.e., have no affiliation with any member of, or organisation involved in the scheme Managing Agency Executive Management Team) the day-to-day operations of the scheme Managing Agency therefore enabling diversity in strategic scheme leadership and directives.
- The scheme Governance Board will provide strategic oversight and direction to the scheme Managing Agency Executive Management Team to support the development and continual improvement of the scheme while also being responsible for reporting to the respective government agency on scheme performance. Additionally, the scheme Governance Board is to monitor and oversee the commercial and operational risks of the NZ CRS (e.g., cashflow, fraud mitigation measures).



- The benefit of this approach is that the scheme Governance Board has a pivotal role in the ultimate success of the NZ CRS and is consequently accountable to the Government. Additionally, this approach means the strategic oversight and direction provided by the independent scheme Governance Board is established by a diverse membership and experience base that has no affiliation with the scheme Managing Agency, only so far as the inclusion of the Managing Agency Chief Executive Officer.
- The roles and responsibilities, including tenure review periods of the scheme Governance Board will be set in the specific container return scheme legislative instruments (e.g., regulations).
  - Setting the roles and responsibilities of the scheme Governance Board in the New Zealand Container Return Scheme regulations will provide transparency and accountability to those elected as members of the Governance Board. Ultimately, the scheme Governance Board is responsible for the ultimate success of the NZ CRS and so their specific roles and responsibilities need to be clearly established within the regulations.
- Clear processes will be established to manage all commercial information and/or data that is confidential and/or sensitive to competitors market activities.
  - Establishment of a clear process and or individual employee contracts specifically restricting the use of commercial and/or sensitive information and/or data will ensure scheme participants have confidence that commercially sensitive information will be used for scheme purposes only.
- Managing Agency Governance Board structure will consider conflicts of interest that may arise from entities/individuals that stand to profit/benefit from the operation of the scheme (i.e., entities/individuals are not independent).
  - The benefit of this approach to the NZ CRS is to ensure independence of Governance Board members. This is because of the potential threat that members could unduly influence (or be perceived to unduly influence) scheme outcomes in favour of themselves or the stakeholders they represent at the expense of others.
- Annual reviews of the scheme Governance Board by the respective central government department responsible for 'owning' the NZ CRS.
  - The benefit of this approach is to ensure the scheme Governance Board is held accountable to central government for the strategic performance of the scheme and the expectations/targets as set out within the NZ CRS legislative framework.
- Implementation of regulated scheme review periods comprising of two (2) initial scheme review periods to assess scheme performance and operation (e.g., eligible scheme container return rates, consumer accessibility) and strategic direction set at the end of the year-3 and year-5 financial periods, then every 5-years thereafter.
  - The benefit of two (2) interim scheme review periods is to enable sufficient time for the scheme to reach optimal performance and enable the scheme Governance Board to assess the schemes performance, including, for example, the interim annual container return rate targets and the accessibility of a consumer focussed network of container return facilities.

### 18.2.14 Reporting

Taking the outcomes of the research into account, including SDWG feedback and acknowledging reporting requirement synergies with the scheme Governance Board, scheme Managing Agency and scheme participants (e.g., Material Consolidation Facilities, container return facilities, beverage producers), the Project Team, on balance, are of the view that the following reporting components will be included in the NZ CRS design and will be taken forward to the implementation stage:

- Integration of a separate financial accounting system and Information and Communications Technology (ICT) platform to manage scheme costs.
  - The benefit of this approach for a NZ CRS is to enable the Managing Agency to have complete transparency and visibility as they relate to the successful functioning and performance of the scheme.
- Reporting and full transparency of key scheme performance data including but not limited to monthly sales data, value of deposits returned to consumers, number of containers collected for each scheme participant.
  - The benefit of this requirement to New Zealand is to ensure the Managing Agency is provided with clear and transparent information on the efficiency and performance of the scheme whilst highlighting areas of improvement.
- Reporting and full transparency of key scheme performance data including but not limited to transparent annual scheme reports and information disseminated via scheme websites (e.g., total containers returned, value of donations, transparency of end-markets) for public transparency.
  - The benefit of this requirement to New Zealand is to ensure the Managing Agency provides clear, robust and transparent information to the public on the efficiency and performance of the scheme whilst highlighting areas of improvement. Additionally, the scheme Managing Agency will be required to report on the operation and performance of the scheme to the Governance Board and the central government department responsible for running the scheme as per the scheme Regulations.
- Establishment of consistent risk and compliance measures such as auditing of scheme participants (e.g., The New Zealand National Data Framework).
  - The benefit of this approach is primarily driven by the Managing Agency establishing consistent methodology to collect and assess scheme data.
- Annual surveys of consumer and scheme participants.
  - The benefit of this requirement to New Zealand is to record and manage faults in the existing system and provide the informed basis for required changes.
- Risk and compliance measures such as auditing of scheme participants carried out in a way so as to minimise fraud.
  - The benefit of this approach is primarily driven by the Managing Agency to monitor scheme participant compliance with scheme requirements to minimise scheme fraud.
- Notwithstanding the contractual arrangements between the scheme Managing Agency and container return facilities, Material Consolidation Facilities and Material Recovery Facilities, legislative instruments will be required to ensure that the Managing Agency is able to access these sites and able to obtain information required to measure and manage the performance of the scheme.
  - The benefit of this approach is primarily driven by the Managing Agency to monitor scheme participant compliance with scheme requirements to minimise scheme fraud and ensure compliance with scheme requirements and expectations.
- Acknowledging the potential make-up of the Managing Agency, clear processes will be established to manage and protect all commercial information and/or data that is confidential and/or sensitive to competitors market activities.
  - Establishment of a clear process and or individual employee contracts specifically restricting the use of commercial and/or sensitive information and/or data will ensure scheme participants have confidence that commercially sensitive information will be used for scheme purposes only.
- The Managing Agency as owner of the recovered scheme material will give effect to the following:

- Ensuring that all recovered scheme material is beneficially reused through measures such as legislative drivers, establishment of long-term contractual arrangements, encourage the use of scheme recycled material for the production of containers, ensure scheme material can have adequate quality to be used again for food packaging, undertake regular inspections of approved scheme re-processors ensuring that minimal scheme material is wasted.
  - The benefit of this approach to Aotearoa New Zealand is that the NZ CRS promotes a holistic end-to-end solution requiring the Managing Agency to take ownership and accountability of the end fate of scheme material and the Managing Agency is enabled to promote the outcomes of the pūnaha whakarōpū para - waste hierarchy.



# SECTION 19: REFERENCES

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## Section 19 References

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27 October 2020

# The New Zealand Container Return Scheme Design

Ministry for the Environment Funded Project

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NZ CRS Final Design

## Appendices



**Appendix A Eligible (including material type and container size) and ineligible containers reported from a range of international container return schemes**

**Table 33: Eligible (including material type and container size) and ineligible containers reported from a range of international container return schemes**

Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
Australia (New South Wales)	<ul style="list-style-type: none"> <li>Waste Avoidance and Resource Recovery Amendment (Container Deposit Scheme) Act</li> <li>Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation</li> </ul>	<ul style="list-style-type: none"> <li>PET</li> <li>HDPE</li> <li>Aluminium</li> <li>Steel</li> <li>Liquid paperboard</li> <li>Glass (excluding pure spirits and alcoholic and non-alcoholic wine)</li> </ul>	<ul style="list-style-type: none"> <li>Cans, such as soft drinks</li> <li>Bottles, such as beer bottles</li> <li>Cartons, such as milk cartons</li> <li>Juice boxes and poppers</li> </ul>	Between 150mL to 3L	<ul style="list-style-type: none"> <li>Damaged, crushed or broken containers</li> <li>Containers without a barcode</li> <li>All containers less than 150mL</li> <li>All containers greater than 3L</li> <li>All concentrated or diluted fruit or vegetable juices</li> <li>All concentrated or undiluted cordials or syrups</li> <li>All pure fruit or vegetable juices greater than 1L</li> <li>All health tonics</li> <li>All plain milk, including alternatives and plant based plain milks</li> <li>All flavoured milk greater than 1L</li> <li>All wines and spirits in glass</li> <li>All wines and water in casks greater than 1L</li> <li>All wines in sachets greater than 250mL</li> <li>Containers purchased outside of Australia</li> <li>Non-beverage containers such as shampoo and detergent bottles</li> </ul>
Australia (South Australia)	<ul style="list-style-type: none"> <li>Environment Protection Act 1993, Part 8, Division 2: Beverage Containers</li> </ul>	<ul style="list-style-type: none"> <li>PET</li> <li>HDPE</li> <li>Aluminium</li> <li>Steel</li> <li>Liquid paperboard</li> <li>Glass (excluding</li> </ul>	<ul style="list-style-type: none"> <li>Wine in plastic, plastic sachets or foil sachets only</li> <li>Yakult</li> <li>Fruit or vegetable juice (at least 90% fruit or</li> </ul>	Up to 250mL (PET)  Up to 1L (HDPE)	<ul style="list-style-type: none"> <li>All containers less than 150mL (excluding 65mL Yakult)</li> <li>All containers greater than 3L</li> <li>All concentrated or diluted fruit or vegetable juices</li> <li>All concentrated or undiluted cordials or</li> </ul>

Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
	<ul style="list-style-type: none"> <li>Commonly known as Container Deposit Legislation (CDL)</li> </ul>	<p>pure spirits and alcoholic and non-alcoholic wine)</p>	<p>vegetable)</p> <ul style="list-style-type: none"> <li>Flavoured milk, including animal milks, soy or plant-based</li> <li>Casks of water, including plain, carbonated or mineral</li> <li>Straight wine in cardboard casks, plastic casks or foil casks only (no glass)</li> <li>Wine based alcoholic beverages, such as fruit-flavoured wine in cardboard casks, plastic casks and foil casks only</li> <li>Water, including plain, carbonated or mineral, in cardboard, plastic or foil casks only</li> </ul>		<p>syrups</p> <ul style="list-style-type: none"> <li>All pure fruit or vegetable juices greater than 1L</li> <li>All health tonics</li> <li>All plain milk, including alternatives and plant based plain milks</li> <li>All flavoured milk greater than 1L</li> <li>All wines and spirits in glass</li> <li>All wines and water in casks greater than 1L</li> <li>All wines in sachets greater than 250mL</li> <li>Containers purchased outside of Australia</li> <li>Non-beverage containers such as shampoo and detergent bottles</li> </ul>
			<ul style="list-style-type: none"> <li>Carbonated soft drinks</li> <li>Non-carbonated soft drinks such as energy drinks, fruit drinks, ready to drink cordials, sports drinks and vitamin drinks</li> <li>Water, including plain, carbonated or mineral (in all materials excluding cardboard, plastic or foil which are only eligible up to 1L)</li> <li>Wine based alcoholic beverages, such as</li> </ul>	Up to 3L (aluminium)	

Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
			fruit-flavoured wine (in all materials excluding cardboard, plastic or foil casks which are only eligible up to 1L) <ul style="list-style-type: none"> <li>Alcoholic beverages derived from fruit other than grape such as cider, plum wine, sake etc</li> <li>Wine in aluminium containers</li> <li>Beer, ale, stout</li> <li>Pure spirits, such as gin, rum, brandy, vodka and whisky (excluding in glass)</li> <li>Spirit based flavoured alcoholic beverages</li> </ul>		
Australia (Queensland)	Waste Reduction and Recycling Amendment Bill 2017[1]	<ul style="list-style-type: none"> <li>PET</li> <li>HDPE</li> <li>Aluminium</li> <li>Steel</li> <li>Liquid paperboard</li> <li>Glass (excluding pure spirits and alcoholic and non-alcoholic wine)</li> </ul>	<ul style="list-style-type: none"> <li>Fermented grape beverages (wine) in plastic, plastic sachets or foil sachets only</li> <li>Fruit or vegetable juice</li> <li>Flavoured milk, including animal milks, soy or plant-based</li> <li>Casks of water, including plain, carbonated or mineral</li> <li>Straight wine in aluminium cans, cardboard casks, plastic casks or foil casks only (no glass)</li> </ul>	Between 150mL to 250ml (PET)  Between 150mL to 1L (HDPE)	<ul style="list-style-type: none"> <li>All containers less than 150mL</li> <li>All containers greater than 3L</li> <li>All concentrated or diluted fruit or vegetable juices</li> <li>All concentrated or undiluted cordials or syrups</li> <li>All pure fruit or vegetable juices greater than 1L</li> <li>All health tonics</li> <li>All plain milk, including alternatives and plant based plain milks</li> <li>All flavoured milk greater than 1L</li> <li>All wines and spirits in glass</li> <li>All wines and water in casks greater than 1L</li> <li>All wines in sachets greater than 250mL</li> </ul>

Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
			<ul style="list-style-type: none"> <li>Wine based alcoholic beverages, such as fruit-flavoured wine in cardboard casks, plastic casks, foil casks and aluminium cans only</li> <li>Water, including plain, carbonated or mineral, in cardboard, plastic or foil casks only</li> </ul>		<ul style="list-style-type: none"> <li>Containers purchased outside of Australia</li> <li>Non-beverage containers such as shampoo and detergent bottles</li> </ul>
			<ul style="list-style-type: none"> <li>Carbonated soft drinks</li> <li>Non-carbonated soft drinks such as energy drinks, fruit drinks, ready to drink cordials, sports drinks and vitamin drinks</li> <li>Water, including plain, carbonated or mineral (in all materials excluding cardboard, plastic or foil which are only eligible up to 1 L)</li> <li>Alcoholic beverages derived from fruit other than grape such as cider, plum wine, sake etc</li> <li>Wine based alcoholic beverages, such as fruit-flavoured wine (in all materials excluding cardboard, plastic or foil casks which are only eligible up to 1 L)</li> <li>Beer, ale, stout</li> </ul>	Between 150mL to 3L (aluminium)	

Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
			<ul style="list-style-type: none"> <li>Pure spirits, such as gin, rum, brandy, vodka and whisky (excluding in glass)</li> <li>Spirit based flavoured alcoholic beverages</li> </ul>		
Australia (Australian Capital Territory)	Waste Management and Resource Recovery Amendment Bill 2016	<ul style="list-style-type: none"> <li>PET</li> <li>HDPE</li> <li>Aluminium</li> <li>Steel</li> <li>Liquid paperboard</li> <li>Glass (excluding pure spirits and alcoholic and non-alcoholic wine)</li> </ul>	<ul style="list-style-type: none"> <li>Soft drinks cans</li> <li>Beer and soft drink bottles</li> <li>Milk and juice cartons</li> </ul>	Between 150ml to 3L	<ul style="list-style-type: none"> <li>All containers less than 150mL</li> <li>All containers greater than 3L</li> <li>All concentrated or diluted fruit or vegetable juices</li> <li>All concentrated or undiluted cordials or syrups</li> <li>All pure fruit or vegetable juices greater than 1L</li> <li>All health tonics</li> <li>All plain milk, including alternatives and plant based plain milks</li> <li>All flavoured milk greater than 1L</li> <li>All wines and spirits in glass</li> <li>All wines and water in casks greater than 1L</li> <li>All wines in sachets greater than 250mL</li> <li>Containers purchased outside of Australia</li> <li>Non-beverage containers such as shampoo and detergent bottles</li> </ul>
Australia (Northern Territory)	Environment Protection (Beverage Containers and Plastic Bags) Act 2011	<ul style="list-style-type: none"> <li>PET</li> <li>HDPE</li> <li>Aluminium</li> <li>Steel</li> <li>Liquid paperboard</li> <li>Glass (excluding pure spirits and alcoholic and</li> </ul>	<ul style="list-style-type: none"> <li>Wine in plastic, plastic sachets or foil sachets only</li> </ul>	Up to 250ml (PET)	<ul style="list-style-type: none"> <li>Crushed or broken containers</li> <li>All containers greater than 3L</li> <li>All concentrated or diluted fruit or vegetable juices</li> <li>All concentrated or undiluted cordials or syrups</li> <li>All pure fruit or vegetable juices greater than 1L</li> </ul>
			<ul style="list-style-type: none"> <li>Fruit or vegetable juice (at least 90% fruit or vegetable)</li> <li>Flavoured milk, including</li> </ul>	Up to 1L (HDPE)	



Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
		non-alcoholic wine)	animal milks, soy or plant-based <ul style="list-style-type: none"> <li>• Casks of water, including plain, carbonated or mineral</li> <li>• Straight wine in cardboard casks, plastic casks or foil casks only (no glass)</li> <li>• Wine based alcoholic beverages, such as fruit-flavoured wine in cardboard casks, plastic casks and foil casks only</li> <li>• Water, including plain, carbonated or mineral, in cardboard, plastic or foil casks only</li> </ul>		<ul style="list-style-type: none"> <li>• All health tonics</li> <li>• All plain milk, including alternatives and plant based plain milks</li> <li>• All flavoured milk greater than 1L</li> <li>• All wines and spirits in glass</li> <li>• All wines and water in casks greater than 1L</li> <li>• All wines in sachets greater than 250mL</li> <li>• Containers purchased outside of Australia</li> <li>• Non-beverage containers such as shampoo and detergent bottles</li> </ul>
			<ul style="list-style-type: none"> <li>• Carbonated soft drinks</li> <li>• Non-carbonated soft drinks such as energy drinks, fruit drinks, ready to drink cordials, sports drinks and vitamin drinks</li> <li>• Water, including plain, carbonated or mineral (in all materials excluding cardboard, plastic or foil which are only eligible up to 1 L)</li> <li>• Wine based alcoholic beverages, such as fruit-flavoured wine (in all materials excluding</li> </ul>	Up to 3L (aluminium)	

Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
			cardboard, plastic or foil casks which are only eligible up to 1 L) <ul style="list-style-type: none"> <li>Alcoholic beverages derived from fruit other than grape such as cider, plum wine, sake etc</li> <li>Wine in aluminium containers</li> <li>Beer, ale, stout</li> <li>Pure spirits, such as gin, rum, brandy, vodka and whisky (excluding in glass)</li> <li>Spirit based flavoured alcoholic beverages</li> </ul>		
Australia (Western Australia)	Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulations 2019	Most aluminium, glass, plastic, steel and liquid paperboard beverage containers	Most aluminium, glass, plastic, steel and liquid paperboard beverage containers	150mL to 3L	<ul style="list-style-type: none"> <li>Beverage containers less than 150mL and greater than 3L:                             <ul style="list-style-type: none"> <li>Any plain milk containers</li> <li>Any glass containers which have contained wine or pure spirits</li> </ul> </li> <li>Containers 1L or more which have contained flavoured milk, pure fruit or vegetable juice, cask wine or cask water</li> <li>Concentrated/undiluted cordial or syrup containers</li> <li>Sachets above 250mL which have contained wine</li> <li>Registered health tonics</li> </ul>
United States of America (New York)	New York State Returnable Container Law	<ul style="list-style-type: none"> <li>Glass</li> <li>Metal (aluminium)</li> <li>Steel</li> <li>Plastic</li> </ul>	<ul style="list-style-type: none"> <li>Carbonated soft drinks</li> <li>Soda water</li> <li>Mineral water, carbonated and non-carbonated</li> </ul>	Up to 1 gallon or 3.78L	<ul style="list-style-type: none"> <li>Milk products</li> <li>Wine and liquors</li> <li>Hard ciders</li> <li>Non-carbonated tea</li> <li>Non-carbonated sports drinks</li> </ul>

Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
			<ul style="list-style-type: none"> <li>Carbonated energy drinks</li> <li>Juice less than 100% juice, containing sugar or water</li> <li>Carbonated juice</li> <li>Carbonated tea</li> <li>Beer and other malt beverages</li> <li>Wine products</li> <li>Water that doesn't contain sugar, such as flavoured or nutritionally enhanced water</li> </ul>		<ul style="list-style-type: none"> <li>Non-carbonated juice (100% fruit and vegetable juice)</li> <li>Non-carbonated energy drinks</li> <li>Drink boxes or pouches</li> <li>Waters containing sugar</li> </ul>
United States of America  (California)	California Beverage Container Recycling and Litter Reduction Act (AB 2020)	<ul style="list-style-type: none"> <li>Glass</li> <li>Bi-metal</li> <li>Aluminium</li> <li>Plastic - PET, HDPE, PVC, LDPE, PP, PS</li> </ul>	<ul style="list-style-type: none"> <li>Beer and malt beverages</li> <li>Wine coolers and distilled spirit coolers</li> <li>Carbonated fruit drinks, water and soft drinks</li> <li>Non-carbonated fruit drinks, water, soft drinks and sports drinks</li> <li>Coffee and tea beverages</li> <li>100 % fruit smaller than 46 ounces</li> <li>Vegetable juice 16 ounces and less</li> </ul>	<p>Up to 24 ounces</p> <p>24 ounces and greater</p>	<ul style="list-style-type: none"> <li>Milk</li> <li>Medical food</li> <li>Infant formula</li> <li>Wine</li> <li>Spirits</li> <li>100% fruit juice 46 ounces or more</li> <li>100% vegetable juice greater than 16 ounces</li> <li>Food and non-beverage containers</li> <li>Beverages sold in containers that are not aluminium, glass, plastic, or bimetal.</li> </ul>
United States of America  (Connecticut)	Beverage Container Deposit and Redemption Law	<ul style="list-style-type: none"> <li>Glass</li> <li>Metal - aluminium</li> <li>Plastic, excluding HDPE</li> </ul>	<ul style="list-style-type: none"> <li>Beer and malt beverages</li> <li>Carbonated soft drinks</li> <li>Bottled water, including mineral, soda, flavoured and nutritionally enhanced water</li> </ul>	Up to 3L	<ul style="list-style-type: none"> <li>Other non-carbonated beverages</li> <li>Juice</li> <li>HDPE containers</li> </ul>

Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
United States of America (Hawaii)	Solid Waste Management; Deposit Beverage Container Law (Act 176)	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Bi-metal</li> <li>• Aluminium</li> <li>• Plastic - PET and HDPE</li> </ul>	<ul style="list-style-type: none"> <li>• All non-alcoholic beverages, including energy drinks and dietary supplements</li> <li>• Beer and malt beverages</li> <li>• Mixed spirits</li> <li>• Mixed wine</li> </ul>	Up to 68 ounces or 2L	<ul style="list-style-type: none"> <li>• Dairy products</li> </ul>
United States of America (Iowa)	Beverage Container Deposit Law	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Metal - predominantly aluminium</li> <li>• Plastic - predominantly PET</li> </ul>	<ul style="list-style-type: none"> <li>• Beer</li> <li>• Carbonated soft drinks</li> <li>• Mineral water</li> <li>• Wine coolers</li> <li>• Wine</li> <li>• Liquor</li> </ul>	No data available	<ul style="list-style-type: none"> <li>• Fruit and vegetable juices</li> <li>• Dairy products</li> </ul>
United States of America (Massachusetts)	Beverage Container Recovery Law	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Metal - aluminium</li> <li>• Plastic</li> </ul>	<ul style="list-style-type: none"> <li>• Beer and malt beverages</li> <li>• Carbonated soft drinks</li> <li>• Mineral water</li> </ul>	No data available	<ul style="list-style-type: none"> <li>• Biodegradable containers</li> <li>• Wine</li> <li>• Dairy products</li> <li>• Natural fruit juices</li> <li>• Non-carbonated alcoholic beverages, other than beer and malt</li> <li>• Containers holding more than two gallons of liquid</li> </ul>
United States of America (Maine)	Maine Returnable Beverage Container Law	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Metal (aluminium/ tinplate)</li> <li>• Plastic</li> </ul>	<ul style="list-style-type: none"> <li>• All beverages excluding those listed in next column</li> </ul>	Up to 4L	<ul style="list-style-type: none"> <li>• Dairy products including milk</li> <li>• Unprocessed cider</li> <li>• Blueberry juice produced in Maine</li> <li>• Aseptic</li> </ul>
United States of America (Michigan)	Michigan Beverage Container Act	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Metal (aluminium/ tinplate)</li> <li>• Plastic</li> <li>• Paper</li> </ul>	<ul style="list-style-type: none"> <li>• Beer and ale</li> <li>• Carbonated soft drinks</li> <li>• Carbonated and mineral water</li> <li>• Canned cocktails</li> <li>• Wine coolers</li> <li>• Malt drinks</li> <li>• Kombucha</li> </ul>	Up to 1 gallon or 3.78L	<ul style="list-style-type: none"> <li>• Milk</li> <li>• Juice</li> <li>• Water</li> <li>• Tea</li> <li>• Sports drinks</li> <li>• Foil pouches</li> </ul>

Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
United States of America  (Oregon)	The Beverage Container Act	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Metal (aluminium/ tinplate)</li> <li>• Plastic</li> </ul>	<ul style="list-style-type: none"> <li>• Coffee and tea</li> <li>• Energy and sports drinks</li> <li>• Fruit and vegetable juice</li> <li>• Juice smoothies</li> <li>• Coconut water</li> <li>• Non-alcoholic wine</li> <li>• Hard cider</li> <li>• Marijuana beverages</li> <li>• Protein shakes (excluding those that are meal replacements)</li> <li>• Kombucha</li> <li>• Cocktail mixers</li> <li>• Kefir</li> <li>• Drinkable yogurt and any milk-based beverage that is primarily milk, or plant-based milk, but includes other ingredients such as fruit</li> </ul>	<ul style="list-style-type: none"> <li>• Between 4 ounces and up to 1.5L (glass, metal (aluminium/ tinplate))</li> <li>• Up to 3L (plastic)</li> </ul>	<ul style="list-style-type: none"> <li>• Distilled liquor</li> <li>• Wine</li> <li>• Dairy, plant-based milks and milk substitutes</li> <li>• Infant formula</li> <li>• Meal replacement drinks</li> <li>• Alcoholic kombucha made with cane sugar</li> <li>• Concentrates</li> <li>• Cartons</li> <li>• Foil pouches</li> <li>• Drink boxes</li> <li>• Metal containers that require a tool to be opened</li> </ul>
United States of America  (Vermont)		<ul style="list-style-type: none"> <li>• Glass</li> <li>• Metal – (aluminium/ tinplate)</li> <li>• Plastic</li> <li>• Paper</li> </ul>	<ul style="list-style-type: none"> <li>• Beer and malt</li> <li>• Carbonated soft drinks</li> <li>• Mixed wine drinks</li> <li>• Wine coolers</li> <li>• Liquor and spirits</li> </ul>	<ul style="list-style-type: none"> <li>• Greater than 50mL for alcoholic beverages</li> <li>• No size restrictions on non-alcoholic beverages</li> </ul>	<ul style="list-style-type: none"> <li>• Biodegradable containers</li> <li>• Wine</li> <li>• Hard cider</li> <li>• Water</li> <li>• Dairy products</li> <li>• Natural fruit juices</li> <li>• Sports drinks</li> </ul>

Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
					<ul style="list-style-type: none"> <li>• Non-carbonated alcoholic beverages, other than beer and malt</li> </ul>
Canada (British Columbia)	Beverage Container Stewardship Program (Litter Act)	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Aluminium</li> <li>• Drink box</li> <li>• Gable top</li> <li>• Bi-metal</li> <li>• Pouch</li> <li>• Plastic (polystyrene cup with foil lid)</li> <li>• Plastic (caps on, label on)</li> <li>• Bag-in-a-box (water)</li> <li>• Liquor plastic (caps on, labels on)</li> <li>• Liquor glass (caps on, labels on)</li> <li>• Bag-in-a-box (alcohol – leave bag in box)</li> </ul>	<ul style="list-style-type: none"> <li>• All ready-to-drink beverages</li> </ul>	<ul style="list-style-type: none"> <li>• Glass (0-1L, over 1L)</li> <li>• Aluminium (0-1L)</li> <li>• Drink box (0-500mL, 501-1L)</li> <li>• Gable top (0-1L, over 1L)</li> <li>• Bi-metal (0-1L, over 1L)</li> <li>• Pouch (0-1L)</li> <li>• Plastic (polystyrene cup with foil lid) (0-454mL)</li> <li>• Plastic (caps on, label on) (0-1L, over 1L)</li> <li>• Bag-in-a-box (water) (over 1L)</li> <li>• Liquor plastic (caps on, labels on) ((0-1L, over 1L)</li> <li>• Liquor glass (caps on, labels on) (0-1L, over 1L)</li> <li>• Bag-in-a-box (alcohol - leave bag in box) (over 1L)</li> </ul>	<ul style="list-style-type: none"> <li>• Milk, including alternatives and plant-based milks</li> <li>• Infant formulas</li> <li>• Meal replacement drinks</li> <li>• Dietary supplements</li> </ul>
Canada (Alberta)	Beverage Container Recycling Regulation	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Metal – (aluminium/ tinplate)</li> <li>• Plastic - PET, HDPE, PVC, PS</li> <li>• Gable top</li> </ul>	<ul style="list-style-type: none"> <li>• All alcoholic beverages</li> <li>• All non-alcoholic beverages including milk</li> </ul>	No data available	No data available

Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
		<ul style="list-style-type: none"> <li>• Tetra Pak</li> <li>• Bag-in-box</li> <li>• Drink pouch</li> </ul>			
Canada (New Brunswick)	Beverage Containers Act	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Metal – (aluminium/ tinplate)</li> <li>• Bi-metal</li> <li>• Plastic</li> <li>• Gable top</li> <li>• Tetra Pak</li> </ul>	<ul style="list-style-type: none"> <li>• All ready-to-drink beverages</li> </ul>	Under 5L	<ul style="list-style-type: none"> <li>• Milk, including alternatives and plant-based milks</li> <li>• Unpasteurised cider</li> </ul>
Canada (Newfoundland and Labrador)	<ul style="list-style-type: none"> <li>• The Newfoundland and Labrador Used Beverage Container Recycling Program</li> <li>• Known as Greenback Trash to Cash Program</li> </ul>	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Gable top</li> <li>• Tetra Pak</li> <li>• Plastic</li> <li>• Metal – (aluminium/ tinplate)</li> <li>• Bi-metal</li> <li>• Drink pouches</li> </ul>	<ul style="list-style-type: none"> <li>• All ready-to-drink beverages</li> <li>• Milk products with the word "beverage" on the label only</li> </ul>	Under 5L	<ul style="list-style-type: none"> <li>• Milk, including alternatives and plant-based milks</li> <li>• Fountain cups</li> <li>• Infant formula</li> <li>• Refillable bottles, including domestic beer bottles</li> <li>• Concentrated liquids</li> <li>• Medicinal/nutritional supplements</li> </ul>
Canada (Northwest Territories)	Beverage Container Program (BCP)	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Tetra Pak</li> <li>• Plastic</li> <li>• Metal (aluminium/ tinplate)</li> <li>• Bi-metal</li> </ul>	<ul style="list-style-type: none"> <li>• All ready-to-drink beverages, including milk</li> </ul>	Under 5L	<ul style="list-style-type: none"> <li>• Milk products less than 30mL</li> <li>• Powder milk</li> <li>• Infant formula</li> <li>• Containers that are sold empty</li> <li>• Open containers filled with a drink when sold</li> </ul>
Canada (Nova Scotia)	Solid Waste – Resource Management Regulations Mandate	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Tetra Pak</li> <li>• Plastic</li> <li>• Metal (aluminium/ tinplate)</li> <li>• Bi-metal</li> <li>• Gable top</li> </ul>	<ul style="list-style-type: none"> <li>• Juice</li> <li>• Health, energy and diet drinks</li> <li>• Soft drinks</li> <li>• Water</li> <li>• Alcohol including imported beer</li> </ul>	Under 5L	<ul style="list-style-type: none"> <li>• Milk, including alternatives and plant-based milks</li> <li>• Soy beverages</li> <li>• Rice beverages</li> <li>• Meal replacement beverages</li> <li>• Formulated liquid diets</li> <li>• Foods for low energy diets</li> </ul>

Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
			<ul style="list-style-type: none"> <li>• Mini sip bags</li> <li>• Brown, green and clear refillable domestic bottles</li> </ul>		<ul style="list-style-type: none"> <li>• Thickened juices</li> <li>• Infant formula</li> <li>• Concentrates</li> <li>• Wine making kits</li> </ul>
Canada (Ontario)	Bag It Back, or Ontario Deposit Return Program	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Tetra Pak</li> <li>• Bag-in-box</li> <li>• Gable top</li> <li>• Plastic</li> <li>• Metal (aluminium, tinplate)</li> <li>• Bi-metal</li> </ul>	<ul style="list-style-type: none"> <li>• All alcoholic beverages</li> <li>• Milk and milk supplements (excluding less than 30mL and baby formula)</li> </ul>	Greater than 100mL	<ul style="list-style-type: none"> <li>• Non-alcoholic beverages, excluding milk and milk supplements</li> <li>• Containers purchased at duty-free</li> </ul>
Canada (Prince Edward Island)	Beverage Container Act	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Tetra Pak</li> <li>• Bag-in-box</li> <li>• Gable top</li> <li>• Drink pouches</li> <li>• Plastic</li> <li>• Metal (aluminium/ tinplate)</li> <li>• Bi-metal</li> </ul>	<ul style="list-style-type: none"> <li>• All ready-to-drink beverages</li> </ul>	Up to 5L	<ul style="list-style-type: none"> <li>• Milk, including alternatives and plant-based milks</li> <li>• Nutritional supplements</li> </ul>
Canada (Quebec)	Agreement Relating to the Consignment, Recovery & Recycling of Non-Refillable (Soft Drink/Beer) Containers	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Plastic</li> <li>• Metal (aluminium/ tinplate)</li> <li>• Bi-metal</li> </ul>	<ul style="list-style-type: none"> <li>• All non-refillable beer</li> <li>• All non-refillable carbonated soft drinks, including beverages that contain water with essence of flavour</li> </ul>	<ul style="list-style-type: none"> <li>• No data available prior to 2022</li> <li>• (As of 2022) between 100 ml and 2 L</li> </ul>	<ul style="list-style-type: none"> <li>• Energy drinks</li> <li>• Water</li> <li>• Juice</li> <li>• Wine</li> <li>• Spirits</li> <li>• Milk</li> </ul>
Canada (Saskatchewan)	Beverage Container Collection and Recycling Program	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Plastic</li> <li>• Metal (aluminium/ tinplate)</li> <li>• Bi-metal</li> <li>• Gable top</li> </ul>	<ul style="list-style-type: none"> <li>• All ready-to-drink beverages</li> </ul>	<ul style="list-style-type: none"> <li>• Aluminium/tin cans (0- &gt;1L)</li> <li>• Plastic bottles/jugs (0- &gt;1L)</li> <li>• Clear and coloured glass (0- &gt;1L)</li> </ul>	<ul style="list-style-type: none"> <li>• Frozen juice concentrates</li> <li>• Baby juices</li> <li>• Foil pouches</li> <li>• Meal replacements</li> <li>• Dietary supplements</li> <li>• Bag-in-a-box containers (wine, water)</li> </ul>



Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
		<ul style="list-style-type: none"> <li>• Tetra Pak</li> </ul>		<ul style="list-style-type: none"> <li>• Cartons and juice boxes (0- &gt;1L)</li> <li>• Refillable beer bottles (341mL)</li> </ul>	<ul style="list-style-type: none"> <li>• Fillable water jugs or industrial milk bladders (larger than 5L)</li> <li>• Products labelled as fortified liquid diet</li> </ul>
Canada (Manitoba)	Waste Reduction and Prevention Act (WRAP) Packaging and Paper Stewardship Regulation	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Plastic</li> <li>• Metal (aluminium/ tinplate)</li> <li>• Bi-metal</li> <li>• Gable top</li> <li>• Tetra Pak</li> <li>• All beer containers</li> </ul>	<ul style="list-style-type: none"> <li>• Beer</li> </ul>	No data available	<ul style="list-style-type: none"> <li>• Non-alcoholic beverages</li> <li>• Wine</li> <li>• Spirits</li> <li>• Milk</li> </ul>
Canada (Yukon)	Beverage Container Regulation	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Plastic</li> <li>• Metal (aluminium/ tinplate)</li> <li>• Bi-metal</li> <li>• Gable top</li> <li>• Tetra Pak</li> </ul>	<ul style="list-style-type: none"> <li>• All ready-to-drink beverages</li> <li>• Milk and milk substitutes</li> </ul>	<ul style="list-style-type: none"> <li>• Milk and milk substitutes (≥30mL)</li> <li>• Beverage containers – small (less than 750mL and ≥ 30mL)</li> <li>• Beverage containers – large (≥750mL)</li> </ul>	<ul style="list-style-type: none"> <li>• Canned coconut milk</li> <li>• Canned condensed or evaporated milk</li> <li>• Canned whipped cream</li> <li>• Powdered drink crystals</li> <li>• Juice concentrates</li> <li>• Liquid meal replacement</li> <li>• Infant formula</li> </ul>
Sweden	SFS 2005:220  Ordinance on the Return System for Plastic Bottles and Metal Cans	<ul style="list-style-type: none"> <li>• Plastic - predominantly PET bottles</li> <li>• • Metal - aluminium and tinplate cans</li> </ul>	<ul style="list-style-type: none"> <li>• All ready-to-drink beverages including:                             <ul style="list-style-type: none"> <li>- beer</li> <li>- soft drinks</li> <li>- cider</li> <li>- bottled water</li> </ul> </li> <li>• Juice can be voluntarily signed up to the scheme by juice producers</li> </ul>	No data available	<ul style="list-style-type: none"> <li>• Dairy products</li> <li>• Fruit and vegetable juice. (Juice can be voluntarily signed up to the scheme by juice producers)</li> <li>• Berry drinks</li> </ul>
Germany	Ordinance on the Avoidance of Packaging Waste <sup>2</sup>	<ul style="list-style-type: none"> <li>• Plastic - Predominantly PET</li> <li>• Metal - aluminium</li> <li>• Glass</li> </ul>	<ul style="list-style-type: none"> <li>• Beer and mixed beer beverages including:                             <ul style="list-style-type: none"> <li>- Mixtures of beer with cola or lemonade</li> <li>- Alcohol-free beer</li> </ul> </li> </ul>	Between 100mL and 3L	<ul style="list-style-type: none"> <li>• Drinks with over 50% milk content</li> <li>• Fruit and vegetable juice</li> <li>• Dietetic products for babies</li> <li>• Containers less than 0.1L or greater than 3L</li> <li>• 'Ecologically advantageous packaging',</li> </ul>

Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
			<ul style="list-style-type: none"> <li>- Beer with syrup (like Berlin whites with a dash)</li> <li>- Beer with another alcoholic beverage (for example beer with vodka)</li> <li>- Flavoured beer (for example, beer with a tequila flavour)</li> <li>• Water including:               <ul style="list-style-type: none"> <li>- Sparkling and sparkling mineral water</li> <li>- Spring water</li> <li>- Healing water</li> <li>- Water with additives, e.g. aroma, caffeine, oxygen</li> <li>- All other drinkable water</li> </ul> </li> <li>• Soft drinks, including:               <ul style="list-style-type: none"> <li>- Cola</li> <li>- Lemonade</li> <li>- Certain fruit juice drinks</li> <li>- Sports drinks</li> <li>- Energy drinks</li> <li>- Ice-tea or coffee drinks that are intended to be consumed when cold</li> <li>- Bitter drinks and</li> </ul> </li> </ul>		including: <ul style="list-style-type: none"> <li>- Beverage carton packs (block packs, gable packs, cylinder packs)</li> <li>- Drink polyethylene tubular bag packaging</li> <li>- Foil stand-up pouches, reusable packaging</li> <li>• Reusable packaging</li> </ul>

Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
			<ul style="list-style-type: none"> <li>other carbonated or non-carbonated drinks</li> <li>- Dietetic drinks with the exception of those that are only available for infants or toddlers</li> <li>• Mixed spirits</li> </ul>		
Lithuania	Packaging and Packaging Waste Management Act	<ul style="list-style-type: none"> <li>• Plastic - PET only</li> <li>• Metal – Aluminium and Ferrous cans</li> <li>• Glass</li> </ul>	<ul style="list-style-type: none"> <li>• Beer and beer cocktails</li> <li>• Cider and other fermented beverages</li> <li>• Mixed alcohol</li> <li>• Non-alcoholic beverages</li> <li>• All types of water</li> <li>• Juice and nectars</li> <li>• Fruit wines and wine based cocktails if sold in plastic and metal packaging</li> </ul>	Between 100mL and 3L	<ul style="list-style-type: none"> <li>• Milk</li> <li>• Wine</li> <li>• Spirits</li> <li>• Any fruit wine based beverage in glass</li> <li>• Containers less than 100mL or greater than 3L</li> </ul>
Denmark	<ul style="list-style-type: none"> <li>• Statutory Order on Packaging for Beer and Soft Drinks #124</li> <li>• Amended by Statutory Order #540</li> </ul>	<ul style="list-style-type: none"> <li>• Plastic- predominantly PET</li> <li>• Metal (aluminium)</li> <li>• Glass</li> </ul>	<ul style="list-style-type: none"> <li>• Beer (alcohol content &gt; 0.5 % by volume)</li> <li>• Carbonated soft drinks (alcohol content of 0 - 0.5%)</li> <li>• Energy drinks</li> <li>• Mineral water</li> <li>• Iced tea</li> <li>• Ready-to-drink beverages, including lemonade, alcopops and cider products</li> <li>• Alcoholic mixers</li> <li>• Fermented products,</li> </ul>	Up to 20 L	<ul style="list-style-type: none"> <li>• Fruit squash</li> <li>• Juice</li> <li>• Cocoa</li> <li>• Wine</li> <li>• Spirits</li> <li>• Milk</li> </ul>

Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
			such as wine, mixed with other beverages such as soft drinks <ul style="list-style-type: none"> <li>• Cider</li> <li>• Chocolate or juice (alcohol content 0.5 - 10%)</li> </ul>		
Austria		<ul style="list-style-type: none"> <li>• Refillable PET bottles</li> </ul>	<ul style="list-style-type: none"> <li>• Beverages in refillable PET bottles</li> </ul>	No data available	<ul style="list-style-type: none"> <li>• Non-refillable plastic containers</li> <li>• All containers except refillable PET</li> </ul>
Croatia	Ordinance on Packaging and Packaging Waste	<ul style="list-style-type: none"> <li>• Glass</li> <li>• Plastic - predominantly PET</li> <li>• Aluminium</li> <li>• Ferrous materials</li> <li>• Tin</li> </ul>	<ul style="list-style-type: none"> <li>• Juices</li> <li>• Mineral water and other waters</li> <li>• Beer</li> <li>• Wine</li> <li>• Hard liquor</li> <li>• Milk drinks less than 0.2 L</li> </ul>	<ul style="list-style-type: none"> <li>• Greater than 200 mL for milk</li> <li>• Unclear for others</li> </ul>	<ul style="list-style-type: none"> <li>• Milk Products</li> </ul>
Estonia	Packaging Act	<ul style="list-style-type: none"> <li>• Plastic (mainly PET)</li> <li>• Metal (aluminium, steel)</li> <li>• Glass</li> </ul>	<ul style="list-style-type: none"> <li>• Soft drinks</li> <li>• Water</li> <li>• Beer</li> <li>• Cider</li> <li>• Juice and juice concentrates</li> <li>• Nectars</li> <li>• Low-ethanol alcoholic beverages, up to 6% volume</li> </ul>	Between 0.1 mL and 3 L	<ul style="list-style-type: none"> <li>• Strong alcoholic beverages such as vodka, wine, etc</li> <li>• Glass jars</li> <li>• Tetra Pak</li> </ul>
Finland	Excise tax on one-way beer and soft-drink containers	<ul style="list-style-type: none"> <li>• Plastic (Mainly PET)</li> <li>• Metal (aluminium)</li> <li>• Glass</li> </ul>	<ul style="list-style-type: none"> <li>• Soft drinks</li> <li>• Water</li> <li>• Beer</li> <li>• Cider</li> <li>• Long drinks</li> <li>• Sports drinks</li> <li>• Juice</li> </ul>	No data available	<ul style="list-style-type: none"> <li>• Milk</li> </ul>

Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
			<ul style="list-style-type: none"> <li>Liquor, spirits and wine sold by Alko</li> </ul>		
Iceland	<ul style="list-style-type: none"> <li>Law for a recycling system (Deposit system)</li> <li>Law 52/1989</li> <li>Regulation 368/2000</li> </ul>	<ul style="list-style-type: none"> <li>Plastic - predominantly PET</li> <li>Metal (aluminium, steel)</li> <li>Glass</li> </ul>	<ul style="list-style-type: none"> <li>All ready-to-drink beverages</li> <li>Wine</li> <li>Liquor</li> </ul>	No data available	<ul style="list-style-type: none"> <li>Milk and milk products</li> <li>Juice extract</li> <li>Refillable containers</li> </ul>
The Netherlands	<ul style="list-style-type: none"> <li>Verpakkingsverordening Productschap Dranken 2003</li> <li>Scheme is voluntary.</li> </ul>	<ul style="list-style-type: none"> <li>Plastic bottles - Predominantly PET (water and soft drinks only)</li> <li>Glass bottles (beer only)</li> </ul>	<ul style="list-style-type: none"> <li>Soft drinks in refillable plastic bottles</li> <li>Water in refillable plastic bottles</li> <li>Beer in refillable glass bottles</li> </ul>	Greater than 0.5L	<ul style="list-style-type: none"> <li>Medical drinks</li> <li>Wine</li> <li>Spirits</li> <li>Moderately alcoholic beverages</li> <li>Cartons that consist of at least 80% paper or paperboard</li> <li>Drink containers with a capacity of less than 100mL</li> <li>Beverage packaging where the producer or importer has demonstrated that less than 500,000 units of consumer packaging are made available annually</li> </ul>
Norway	The Product Control Act	<ul style="list-style-type: none"> <li>Single-use plastic - Predominantly PET and HDPE</li> <li>Single-use metal (aluminium/ tinplate)</li> </ul>	<ul style="list-style-type: none"> <li>Beer</li> <li>Carbonated beverages</li> <li>Wine</li> <li>Liquor</li> <li>Non-carbonated beverages</li> <li>Fruit and vegetable juices</li> <li>Concentrates</li> <li>Milk products</li> </ul>	No data available	<ul style="list-style-type: none"> <li>Milk, milk products, cocoa and chocolate beverages and powders</li> </ul>
Israel	Israel Beverage Container Deposit Law	<ul style="list-style-type: none"> <li>PET</li> <li>Aluminium</li> <li>Metal</li> <li>Glass</li> </ul>	<ul style="list-style-type: none"> <li>All beverages</li> <li>Refillable containers</li> </ul>	Between 100mL and 1.5L	<ul style="list-style-type: none"> <li>Dairy products</li> <li>Paper and cardboard containers</li> <li>Plastic pouches</li> </ul>

Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
Federated States of Micronesia (Kosrae)	<ul style="list-style-type: none"> <li>The Kosrae Recycling Program</li> <li>State Law 5 - 15, Title 9, Chapter 22. Title 10, Section 205(1)(d)</li> </ul>	<ul style="list-style-type: none"> <li>Plastic</li> <li>Aluminium</li> <li>Glass</li> </ul>	No data available	No data available	No data available
Kiribati	The Special Fund (Waste Materials Recovery) Act 2004	<ul style="list-style-type: none"> <li>PET bottles</li> <li>Aluminium cans</li> </ul>	<ul style="list-style-type: none"> <li>Beer</li> <li>Soft drink</li> <li>Water</li> </ul>	No data available	<ul style="list-style-type: none"> <li>Milk</li> </ul>
Palau		<ul style="list-style-type: none"> <li>Glass</li> <li>PET</li> <li>HDPE</li> <li>Metal</li> </ul>	<ul style="list-style-type: none"> <li>Beer</li> <li>Ale</li> <li>Drinks produced by fermenting malt</li> <li>Mixed spirits</li> <li>Mixed wine</li> <li>Tea</li> <li>Coffee drinks, regardless of dairy content</li> <li>Soda</li> <li>Non-carbonated water</li> </ul>	Up to 32 ounces or 0.946L	<ul style="list-style-type: none"> <li>Syrup</li> <li>Drinks in concentrated form</li> <li>Drinks typically as a minor flavouring ingredient</li> <li>Drinks ingested for medicinal purposes</li> <li>Nutritional supplements</li> <li>Frozen drinks at point of sale</li> <li>Drink powders</li> <li>Milk and other dairy-derived products, excluding coffee drinks</li> </ul>
Barbados	The Returnable Containers Act	<ul style="list-style-type: none"> <li>Glass</li> <li>Metal</li> <li>Plastic</li> </ul>	<ul style="list-style-type: none"> <li>Soft drinks</li> <li>Carbonated and mineral water</li> <li>Beer</li> <li>Malt beverages</li> </ul>	Up to 1 gallon or 3.78L	No data available
India (Maharashtra)		<ul style="list-style-type: none"> <li>PET bottles</li> <li>Pouches (milk only)</li> </ul>	<ul style="list-style-type: none"> <li>Milk in pouches</li> <li>All beverages in single-use PET bottles</li> </ul>	200mL and greater	No data available

Country	Regulation	Eligible Containers			Ineligible Containers
		Eligible materials	Eligible beverages	Container size	
South Korea	<ul style="list-style-type: none"> <li>Act on the Promotion of Saving and Recycling of Resources</li> <li>Deposit Refund System</li> </ul>	<ul style="list-style-type: none"> <li>Refillable glass</li> </ul>	<ul style="list-style-type: none"> <li>All fermented and distilled liquor, including soju, sake and beer</li> <li>Soft drinks</li> </ul>	All sizes	No data available
Switzerland		<ul style="list-style-type: none"> <li>If their recycling rates fall below 75% by weight:</li> <li>Non-refillable glass</li> <li>PET</li> <li>Aluminium</li> </ul>	<ul style="list-style-type: none"> <li>If their recycling rates fall below 75% by weight:</li> <li>All beverages in single-use containers</li> <li>Soft drinks</li> <li>Beer</li> <li>Mineral water</li> </ul>	No data available	No data available

**Appendix A References:**

[www.australianbeverages.org/initiatives-advocacy-information/container-deposit-schemes/new-south-wales/](http://www.australianbeverages.org/initiatives-advocacy-information/container-deposit-schemes/new-south-wales/)  
[www.epa.nsw.gov.au/your-environment/recycling-and-reuse/return-and-earn](http://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/return-and-earn)  
<https://legislation.nsw.gov.au/#/view/regulation/2017/66/part3/div1/sec22b>  
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## Appendix B Conditions of acceptance for eligible containers recorded across several international container return schemes

**Table 34: Conditions of acceptance for eligible containers recorded across several international container return schemes**

Scheme and Location	Name of Regulation	Conditions of Acceptance
New South Wales, Australia  <i>NSW Container Deposit Scheme</i>  <i>Return and Earn</i>	The Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation 2017  under the <i>Waste Avoidance and Resource Recovery Act 2001</i>	Containers must comply with the below: <ul style="list-style-type: none"> <li>• Be of the eligible container type, size and material</li> <li>• Be labelled with the clearly legible words “10c refund at collection depots/points in participating State/Territory of purchase”</li> <li>• Be marked with a barcode unique to that class of containers. Detailed requirements for the barcodes are listed in Section 22A of the Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation 2017.</li> <li>• The opening mechanism must not be one that can result in the separation of parts of the container, such as a ring-pull system.</li> <li>• Must not be damaged, crushed or broken.</li> <li>• Must be empty and have the original label and barcode attached.</li> <li>• Be purchased in Australia.</li> </ul>
South Australia, Australia  <i>Container Deposit Legislation</i>	Environment Protection (Beverage Container) Regulations 2008  under the <i>Environment Protection Act 1993</i>	Containers must comply with the below: <ul style="list-style-type: none"> <li>• Be of the eligible container type, size and material.</li> <li>• Be labelled with the clearly legible words of the three options below:               <ul style="list-style-type: none"> <li>- “10c refund at collection depots/points in participating State/Territory of purchase”</li> <li>- “10c refund at SA/NT collection depots in State/Territory of purchase”</li> <li>- “10c refund at collection depots when sold in SA”</li> </ul> </li> <li>• Where cans have been crushed, the refund label must still be clearly visible.</li> <li>• Must not be contaminated with substances that make the container a health risk or unsuitable for recycling.</li> <li>• Must be empty.</li> <li>• Be purchased in Australia.</li> </ul> It is not a legal requirement to remove the lids of containers, however it is preferred and recommended in many depots.
Queensland, Australia  <i>Containers for Change</i>	Waste Reduction and Recycling (Container Refund Scheme) Amendment Regulation 2018  Under the <i>Waste Reduction and Recycling Act 2011</i>	Containers must comply with the below: <ul style="list-style-type: none"> <li>• Be of the eligible container type, size and material.</li> <li>• Be labelled with the clearly legible words “10c refund at collection depots/points in participating State/Territory of purchase”</li> <li>• Must not be crushed to the point where it can’t be recognised.</li> <li>• Where cans have been crushed, the refund label must still be clearly visible.</li> <li>• At return points where Reverse Vending Machines (RVMS) are used, containers must not be crushed or damaged and barcodes must be clearly visible.</li> <li>• Must not be contaminated with substances that make the container a health risk or unsuitable for recycling.</li> <li>• Must be empty.</li> <li>• Be purchased in Australia.</li> </ul> It is not a legal requirement to remove the lids of containers, however it is preferred and recommended in many depots.

Scheme and Location	Name of Regulation	Conditions of Acceptance
Australian Capital Territory, Australia  <i>ACT Container Deposit Scheme</i>	Waste Management and Resource Recovery (Container Deposit Scheme) Amendment Regulation 2018 (No 1)  Under the <i>Waste Management and Resource Recovery Act 2016</i> .	Containers must comply with the below: <ul style="list-style-type: none"> <li>• Be of the eligible container type, size and material.</li> <li>• Be labelled with the clearly legible words “10c refund at collection depots/points in participating State/Territory of purchase”</li> <li>• Must not be contaminated with substances that make the container a health risk or unsuitable for recycling.</li> <li>• Must not be crushed to the point where it can’t be recognised.</li> <li>• Must not be crushed to the point where the refund label is not clearly visible.</li> <li>• At return points where RVMs are used, containers must not be crushed or damaged and barcodes must be clearly visible.</li> <li>• Must be empty.</li> <li>• Be purchased in Australia.</li> </ul> It is not a legal requirement to remove the lids of containers, however it is preferred and recommended in many depots.
Northern Territory, Australia  <i>Cash for Containers Scheme</i>	Environment Protection (Beverage Containers and Plastic Bags) Regulations 2011  Under the <i>Environment Protection (Beverage Containers and Plastic Bags) Act 2011</i> .	Containers must comply with the below: <ul style="list-style-type: none"> <li>• Be of the eligible container type, size and material.</li> <li>• Be labelled with the clearly legible words of the three options below:               <ul style="list-style-type: none"> <li>- “10c refund at collection depots/points in participating State/Territory of purchase”</li> <li>- “10c refund at SA/NT collection depots in State/Territory of purchase”</li> <li>- “10c refund at collection depots when sold in Northern Territory”</li> </ul> </li> <li>• Must be empty.</li> <li>• Must not be broken or crushed.</li> <li>• Be purchased in Australia.</li> </ul> It is not a legal requirement to remove the lids of containers, however it is preferred and recommended in many depots.
Western Australia, Australia  <i>Containers for Change</i>	Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulations 2019  Under the <i>Waste Avoidance and Resource Recovery Act 2007</i>	Containers must comply with the below: <ul style="list-style-type: none"> <li>• Be of the eligible container type, size and material.</li> <li>• The material of the container must be one that can be recycled or reused</li> <li>• Be labelled with the clearly legible words “10c refund at collection depots/points in participating State/Territory of purchase”. It is recommended that the numeral ‘10’ be a minimum of 3 mm in height with a minimum 3 mm ‘free space’ boundary around the refund mark.</li> <li>• Be marked with a barcode unique to that class of containers. Detailed requirements for the barcodes are listed in Section 3H of the Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulations 2019.</li> <li>• The position of the refund mark must not disrupt the container from being able to be recycled.</li> <li>• Must not be contaminated with substances that make the container a health risk or unsuitable for recycling.</li> <li>• Must not be crushed to the point where it can’t be recognised.</li> <li>• Must not be crushed to the point where the refund label is not clearly visible.</li> <li>• At return points where RVMs are used, containers must not be crushed or damaged and barcodes must be clearly visible.</li> </ul>

Scheme and Location	Name of Regulation	Conditions of Acceptance
		<ul style="list-style-type: none"> <li>• Must be purchased after the appointed day as per Section 47E of the Waste Avoidance and Resource Recovery Act 2007</li> <li>• Must be empty.</li> <li>• Be purchased in Australia.</li> </ul> <p>It is not a legal requirement to remove the lids of containers, however it is preferred and recommended in many depots.</p>
<p>New York, United States of America (USA)</p> <p><i>Bottle Bill</i></p>	<p><i>New York State Returnable Container Act</i></p>	<p>Containers must comply with the below:</p> <ul style="list-style-type: none"> <li>• Be purchased in the state of New York.</li> <li>• Be sealed.</li> <li>• Be clearly and permanently labelled with the New York State deposit information, in accordance with the below: <ul style="list-style-type: none"> <li>- Located at the top of metal containers</li> <li>- The product label must be at the front, back body or on the neck.</li> </ul> </li> <li>• The opening mechanism must not be one that can result in the separation of parts of the container, such as a ring-pull system, unless the detachable part can decompose by biodegradation or photodegradation. Plastic loop holders/retainers must also be biodegradable or photodegradable and consist of at least 90 % post-consumer recycled HDPE. The plastic loop holders must show the resin identification code and have an opening diameter only up to 1 3/4" (4.445 cm)</li> <li>• The label must be 1/8 inches (3.175 mm) in height</li> <li>• The label must clearly show "NY" or "New York" and the refund amount of 5c. For example, the label can show "NY 5 cents" or "NY 5¢". New York may be listed next to other states in the USA that operate container return schemes.</li> <li>• The refund amount cannot be only on the bottom of the container or on any removal parts, such as lids and foil cover.</li> <li>• The label cannot be rubberstamped onto the containers.</li> <li>• If beverages are not manufactured in the USA, alternating labelling may be accepted. The New York State Department of Environmental Conservation will assess such a situation.</li> </ul>
<p>California, USA</p> <p><i>California's Beverage Container Recycling Program</i></p>	<p><i>California Beverage Container Recycling and Litter Reduction Act (AB 2020)</i></p>	<p>Containers must comply with the below:</p> <ul style="list-style-type: none"> <li>• Be of the eligible container type, size and material.</li> <li>• Be purchased in the state of California.</li> <li>• Be labelled with the clearly legible words of the options below: <ul style="list-style-type: none"> <li>- "California Redemption Value"</li> <li>- "CA Redemption Value"</li> <li>- "California Cash Refund"</li> <li>- "CA CRV"</li> <li>- "CA Cash Refund"</li> </ul> </li> <li>• A sample of each container of every different container type must be sent to CalRecycle (the governing agency) to verify compliance.</li> <li>• Labeling of the containers, for each different material type, must be undertaken in accordance with the size, location and visibility requirements. The requirements can be found on CalRecycle's website at: <a href="https://www2.calrecycle.ca.gov/Publications/Details/1573">https://www2.calrecycle.ca.gov/Publications/Details/1573</a></li> <li>• Must be empty and without contaminants.</li> <li>• Must not be broken or damaged, however it can be crushed depending on the preferences of the recycling centre.</li> <li>• By count, containers can be redeemed for up to 50 containers at once for each material i.e., 50 glass containers, 50 aluminium containers and 50 plastic. For container materials over 50 counts, it is the discretion of the recyclers if they want to pay per count or weight.</li> <li>• By weight, the maximum that can be redeemed by one person in a day is 100 pounds (45.4 kg) of aluminium and plastic each, and 1,000 pounds (453.6 kg)</li> </ul>

Scheme and Location	Name of Regulation	Conditions of Acceptance
		<p>for glass.</p> <p>It is not a legal requirement to seal the bottles, however it is recommended that caps are kept on the bottles. Individual recycling centers may prefer that the lids are off.</p>
Lithuania  <i>Deposit Return System</i>	<i>Packaging and Packaging Waste Management Act</i>	<p>Containers must comply with the below:</p> <ul style="list-style-type: none"> <li>• Be of the eligible container type, size and material.</li> <li>• Must be empty.</li> <li>• Be marked with a barcode that identifies the manufacturer or importer. Requirements for the barcode are outlined in a procedure established by Užstato sistemos asministratoriuis (The scheme operator). The requirements can be found online at <a href="https://grazintiverta.lt/wp-content/uploads/2016/01/Instrukciju_vadovas_gamintojams_2015_09_30.pdf">https://grazintiverta.lt/wp-content/uploads/2016/01/Instrukciju_vadovas_gamintojams_2015_09_30.pdf</a></li> <li>• Be labelled with a clearly visible mark that shows that the container is included in the scheme. Requirements for the mark are outlined in a procedure established by the minister for the environment. The requirements can be found online at <a href="https://grazintiverta.lt/wp-content/uploads/2016/01/Vienkartiniu_pakuociu_zenklinimo_isakymas_15.07.01.docx">https://grazintiverta.lt/wp-content/uploads/2016/01/Vienkartiniu_pakuociu_zenklinimo_isakymas_15.07.01.docx</a></li> <li>• Must not be crushed or damaged to the point where the Reverse Vending Machines cannot identify the container, where the deposit system label cannot be seen or where the barcode is damaged.</li> </ul>
Germany  <i>The Deutsche Pfandsystem GMBH (DPG)-System</i>	Ordinance on the Avoidance and Recovery of Packaging Wastes (Packaging Ordinance - "VerpackV")	<p>Containers must comply with the below:</p> <ul style="list-style-type: none"> <li>• Be of the eligible container type, size and material.</li> <li>• Be marked with a barcode that identifies the product and the manufacturer or importer. The barcode must have a unique (Global Location Number) GLN code to identify the manufacturer or importer and a unique (Global Trade Item Number) GTIN code to identify the product. The barcode is printed on the label by one of the approved DPG label printers. For cans, one of the approved drinks manufacturers prints the barcode straight on the packaging of the cans. Items that already have a barcode can be provided with a DPG cover label to be pasted over the existing barcode. Technical instructions are available in the contractual documents.</li> <li>• Be labelled clearly and securely with a mark showing that the container is part of the scheme. The DPG label must be printed on the packaging with a special safety ink 'the DPG Ink', which can only be used by selected label printers and drinks manufacturers. The label is produced by one of the approved DPG label printers. For cans, one of the approved drinks manufacturers prints the DPG label straight on the packaging of the cans. Technical instructions are available in the contractual documents.</li> <li>• Must not be crushed or damaged to the point where the Reverse Vending Machines cannot identify the container, where the DPG label cannot be seen or where the barcode is damaged.</li> <li>• Must be saved by the first distributor in the DPG system database so that containers can be identified when returned.</li> </ul>
Sweden  <i>Regulation on Producer Responsibility for Packaging</i>	Ordinance on the Return System for Plastic Bottles and Metal Cans	<p>Containers must comply with the below:</p> <ul style="list-style-type: none"> <li>• Be clearly labelled with the refund amount "Pant 1 kr" or "Pant 2 kr". The label must be approved by the Board of Agriculture. Requirements for the label, including size and location can be found online at: <a href="https://pantamera.nu/wp-content/uploads/2019/06/Teknisk-specifikation-och-m%C3%A4rkningsmanual-2019-06-26.pdf">https://pantamera.nu/wp-content/uploads/2019/06/Teknisk-specifikation-och-m%C3%A4rkningsmanual-2019-06-26.pdf</a>.</li> <li>• Be clearly marked with a unique EAN barcode that identifies the product and the manufacturer. Requirements for the barcode, including size and location can be found online at: <a href="https://pantamera.nu/wp-content/uploads/2019/06/Teknisk-specifikation-och-m%C3%A4rkningsmanual-2019-06-26.pdf">https://pantamera.nu/wp-content/uploads/2019/06/Teknisk-specifikation-och-m%C3%A4rkningsmanual-2019-06-26.pdf</a></li> </ul>

Scheme and Location	Name of Regulation	Conditions of Acceptance
		<ul style="list-style-type: none"> <li>• Be designed in accordance with the requirements for material, shape and size available online at: <a href="https://pantamera.nu/wp-content/uploads/2019/06/Teknisk-specifikation-och-m%C3%A4rkningsmanual-2019-06-26.pdf">https://pantamera.nu/wp-content/uploads/2019/06/Teknisk-specifikation-och-m%C3%A4rkningsmanual-2019-06-26.pdf</a></li> <li>• Must not be crushed or damaged to the point where the deposit label or the barcode cannot be clearly read.</li> <li>• Must not be crushed or flattened</li> <li>• Must be returned within 2 years of purchase.</li> </ul>
Denmark  <i>Deposit and return system</i>	Statutory Order on Packaging for Beer and Soft Drinks #124, amended by Statutory Order #540  Under the <i>Environmental Protection Act</i>	Containers must comply with the below: <ul style="list-style-type: none"> <li>• All domestic beer and soft drinks must be sold in refillable bottles</li> <li>• Be visibly labelled with the Danish deposit mark and barcode. Refillable bottles with no deposit mark can still be refunded if the receipt of purchase shows that a deposit was paid. The receipt is valid for up to three years.               <ul style="list-style-type: none"> <li>- The Danish deposit label must be requested to be legally used from Dansk Retursystem, the scheme operator.</li> <li>- The Danish deposit label must be printed or stuck on directly to the bottle or can.</li> </ul> </li> <li>• Must not be crushed or damaged and the original shape of the container must remain the same so that the machines are able to identify the container. Some manual counters located in stores accept damaged bottles, however the barcode and deposit mark should still be visible.</li> <li>• Must be purchased from Denmark. Refunds will not be provided however these containers can still be dropped off to be recycled through the scheme.</li> <li>• Large containers up to 20L can be refunded at stores where they were purchased.</li> </ul> It is not a legal requirement to seal the bottles, however it is recommended that lids are kept on the bottles.
Nova Scotia, Canada  <i>The Beverage Container Deposit-Refund Program</i>	Solid Waste – Resource Management Regulations Mandate  Under Section 102 the <i>Environment Act</i>	Containers must comply with the below: <ul style="list-style-type: none"> <li>• Must be purchased in Nova Scotia</li> <li>• Must be clearly labelled with the words “RETURN FOR REFUND” or words with the same intention</li> </ul>
British Columbia, Canada	Beverage Container Stewardship Program  Under the <i>Litter Act</i>	Containers must comply with the below: <ul style="list-style-type: none"> <li>• All ready-to-drink containers, excluding those of ineligible beverages, must be sold in recyclable or refillable containers</li> <li>• By count, containers can be redeemed for up to 24 containers per person per day at retailers where the containers can be purchased.</li> <li>• Must be cleaned and uncontaminated.</li> <li>• Must be purchased from British Columbia.</li> <li>• Can be flattened, however label should still be clearly readable.</li> <li>• Cans should not be crushed.</li> <li>• Be clearly labelled with the label identifying the container as part of the scheme.</li> </ul>
Quebec, Canada	Agreement Relating to the Consignment	Containers must comply with the below: <ul style="list-style-type: none"> <li>• Be visibly labelled with the following:               <ul style="list-style-type: none"> <li>- The amount of deposit for the container;</li> <li>- The word “Québec”; and</li> </ul> </li> </ul>

Scheme and Location	Name of Regulation	Conditions of Acceptance
<i>The deposit/refund system</i>	<p>, Recovery &amp; Recycling of Non-Refillable (Soft Drink/Beer) Containers</p> <p>Under Law V-5.001 - Act respecting the sale and distribution of beer and soft drinks in non-returnable containers</p>	<ul style="list-style-type: none"> <li>- The words “consignée” and “refund” or “deposit”.</li> <li>• The label must be stamped or dyed on the container, and not on any part of it such as a cap which may be removed. Requirements for the design and location of the label are found online at <a href="https://www.bge-quebec.com/wp-content/uploads/2017/06/schedule-d-identification-of-containers.pdf">https://www.bge-quebec.com/wp-content/uploads/2017/06/schedule-d-identification-of-containers.pdf</a></li> </ul>

## Appendix C Handling fees reported from 41 global container return schemes

Table 35: Handling fees reported from 41 global container return schemes (as at April 2020)<sup>1071</sup>

Jurisdiction	Handling Fee (per container)	Notes
Croatia	<ul style="list-style-type: none"> <li>RVM accepted containers: 0.12 HRK (€0.016, USD\$0.017)</li> <li>Manually accepted containers: 0.10 HRK (€0.013, USD\$0.014)</li> </ul>	25% VAT included.
Denmark	<ul style="list-style-type: none"> <li>Manually accepted containers or RVM accepted containers without compaction: <ul style="list-style-type: none"> <li>Metal: 0.060 DKK (€0.008, USD\$0.009)</li> <li>Plastic &lt; 1L: 0.067 DKK (€0.009, USD\$0.0097)</li> <li>Plastic &gt; 1L: 0.10 DKK (€0.014, USD\$0.015)</li> <li>Glass: 0.14 DKK (€0.019, USD\$0.0214)</li> </ul> </li> <li>RVM accepted containers with compaction: <ul style="list-style-type: none"> <li>Metal: 0.0149 DKK (€0.0019, USD\$0.0020)</li> <li>Plastic &lt;1L: 0.014 DKK (€0.0019, USD\$0.0026)</li> <li>Plastic &gt; 1L: 0.024 DKK (€0.0032, USD\$0.0035)</li> <li>Glass: 0.071 DKK (€0.0095, USD\$0.0103)</li> </ul> </li> </ul>	None
Estonia	<ul style="list-style-type: none"> <li>Manually accepted containers or RVM accepted containers without compaction: <ul style="list-style-type: none"> <li>Plastic, metal: €0.0115 (USD\$0.013)</li> <li>Glass: €0.013 (USD\$0.014)</li> </ul> </li> </ul>	Does not include VAT.
Finland	<ul style="list-style-type: none"> <li>Manually accepted containers or RVM accepted containers without compaction: <ul style="list-style-type: none"> <li>Metal, plastic, glass: €0.027 (USD\$0.029)</li> </ul> </li> <li>RVM accepted containers with compaction: <ul style="list-style-type: none"> <li>Metal, plastic, glass: €0.03 (USD\$0.033)</li> </ul> </li> </ul>	None
Germany	<ul style="list-style-type: none"> <li>None</li> </ul>	No handling fee, but retailer owns the material.
Iceland	<ul style="list-style-type: none"> <li>3 ISK (€0.02, USD\$0.021)</li> </ul>	None

<sup>1071</sup> <https://www.reloopplatform.org/wp-content/uploads/2020/04/Fact-Sheet-Handling-Fees-6April2020.pdf>



Jurisdiction	Handling Fee (per container)	Notes
Lithuania	<ul style="list-style-type: none"> <li>• Manually accepted containers or RVM accepted containers without compaction:               <ul style="list-style-type: none"> <li>- PET: €0.0193 (USD\$0.021)</li> <li>- Metal: €0.0144 (USD\$0.016)</li> <li>- Glass: €0.0328 (USD\$0.036)</li> </ul> </li> <li>• RVM accepted containers with compaction:               <ul style="list-style-type: none"> <li>- PET: €0.0159 (USD\$0.017)</li> <li>- Metal: €0.0138 (USD\$0.015)</li> <li>- Glass: €0.0199 (USD\$0.022)</li> </ul> </li> </ul>	None
Netherlands	<ul style="list-style-type: none"> <li>• None</li> </ul>	None
Norway	<ul style="list-style-type: none"> <li>• Manually accepted containers or RVM accepted containers without compaction:               <ul style="list-style-type: none"> <li>- Metal: 0.05 NOK (€0.0042, USD\$0.0045)</li> <li>- Plastic: 0.10 NOK (€0.0083, USD\$0.0090)</li> </ul> </li> <li>• RVM accepted containers with compaction:               <ul style="list-style-type: none"> <li>- Metal: 0.20 NOK (€0.017, USD\$0.018)</li> <li>- Plastic: 0.25 NOK (€0.021, USD\$0.022)</li> </ul> </li> </ul>	None
Sweden	<ul style="list-style-type: none"> <li>• Manually accepted containers:               <ul style="list-style-type: none"> <li>- Metal: None</li> <li>- Plastic: 0.2 SEK (€0.018, USD\$0.020)</li> </ul> </li> <li>• RVM accepted containers without compaction:               <ul style="list-style-type: none"> <li>- Metal, Plastic: 0.174 SEK (€0.016, USD\$0.017)</li> <li>- Plastic ≤1L: 0.258 SEK (€0.024, USD\$0.025)</li> <li>- Plastic &gt;1L: 0.345 SEK (€0.031, USD\$0.034)</li> </ul> </li> <li>• RVM accepted containers with compaction:               <ul style="list-style-type: none"> <li>- Metal: 0.19 SEK (€0.017, USD\$0.019)</li> <li>- Plastic &lt;1L: 0.316 SEK (€0.029, USD\$0.031)</li> <li>- Plastic &gt;1L: 0.503 SEK (€0.046, USD\$0.049)</li> </ul> </li> </ul>	None
California	<ul style="list-style-type: none"> <li>• USD\$0.00833 (€0.0077)</li> </ul>	Paid by the state to convenience zone recyclers.
Connecticut	<ul style="list-style-type: none"> <li>• Beer or malt containers: USD\$0.015 (€0.014)</li> <li>• All other containers: USD\$0.02</li> </ul>	None

Jurisdiction	Handling Fee (per container)	Notes
	(€0.019)	
Hawaii	<ul style="list-style-type: none"> <li>USD\$0.03 (€0.028) to USD\$0.07 (€0.065)</li> </ul>	Paid to redemption centres from the Deposit Beverage Container Fund.
Iowa	<ul style="list-style-type: none"> <li>USD\$0.01 (€0.0093)</li> </ul>	Paid by deposit initiator to retailers and redemption centres.
Maine	<ul style="list-style-type: none"> <li>Brand-sorted containers: USD\$0.045 (€0.042)</li> <li>Containers that are part of a co-mingling agreement: USD\$0.035 (€0.033)</li> </ul>	Differential rates incentivise co-mingling agreements.
Massachusetts	<ul style="list-style-type: none"> <li>Containers returned to retailers: USD\$0.0225 (€0.021)</li> <li>Containers returned to redemption centres: USD\$0.0325 (€0.03)</li> </ul>	Retailers receive free pick-up of containers by deposit initiators. Redemption centres must deliver redeemed containers to a central processing facility.
Michigan	<ul style="list-style-type: none"> <li>None</li> </ul>	While there is no handling fee per se, 25% of unredeemed deposits are available to retailers to cover handling costs.
New York	<ul style="list-style-type: none"> <li>USD\$0.035 (€0.03)</li> </ul>	Paid by the distributor or deposit initiator.
Oregon	<ul style="list-style-type: none"> <li>None</li> </ul>	None
Vermont	<ul style="list-style-type: none"> <li>Brand-sorted containers: USD\$0.04 (€0.037)</li> <li>Containers that are part of a co-mingling agreement: USD\$0.035 (€0.033)</li> </ul>	None
Alberta	<ul style="list-style-type: none"> <li>Refillable beer bottles: CAD\$0.0464 (€0.030, USD\$0.032)</li> <li>All other containers: CAD\$0.03242 (€0.022, USD\$0.022) to CAD\$0.2384 (€0.15, USD\$0.16)</li> </ul>	Regulated by government and payable by a manufacturer or collection system agent to collection depots.
British Columbia	<ul style="list-style-type: none"> <li>Refillable beer bottles: Bottle depots independently negotiate handling fees directly with the beer industry. The average rate is about CAD\$0.29/dozen (€0.19, USD\$0.20) or CAD\$0.0242/bottle (€0.016, USD\$0.017)</li> <li>All other containers: CAD\$0.027 (€0.017, USD\$0.019) to CAD\$0.1127 (€0.072, USD\$0.078)</li> </ul>	Paid by Encorp Pacific (Canada) and Brewers Distributors Ltd. to authorized depots and contracted retailers. Handling fees fluctuate depending on the cost to collect and process each type of container.
Manitoba	<ul style="list-style-type: none"> <li>Beer cans: CAD\$0.0204 (€0.013, USD\$0.014)</li> <li>Refillable beer bottles: CAD\$0.0267 (€0.017, USD\$0.018)</li> </ul>	None

Jurisdiction	Handling Fee (per container)	Notes
Newfoundland and Labrador	<ul style="list-style-type: none"> <li>Refillable beer bottles: CAD\$0.05 (€0.017, USD\$0.032)</li> <li>All other containers: CAD\$0.0435 (€0.028, USD\$0.03)</li> </ul>	The handling fee on refillable beer is charged at the back-end from the refund.
New Brunswick	<ul style="list-style-type: none"> <li>Refillable beer bottles: CAD\$0.0290 (€0.019, USD\$0.020)</li> <li>All other containers: CAD\$0.0406 (€0.026, USD\$0.028)</li> </ul>	None
Northwest Territories	Refillable beer bottles: none All other containers: CAD\$0.022 (€0.014, USD\$0.015) to CAD\$0.045 (€0.029, USD\$0.031)	None
Nova Scotia	Refillable beer bottles: CAD\$0.0274 (€0.019, USD\$0.02) Moosehead brand bottle: CAD\$0.0257 (€0.016, USD\$0.018) All other containers: CAD\$0.0427 (€0.027, USD\$0.029)	None
Ontario	Not available	Proprietary
Prince Edward Island	Refillable beer bottles: CAD\$0.0281 (€0.018, USD\$0.019) All other containers: CAD\$0.04211 (€0.028, USD\$0.029)	None
Quebec	Refillable beer bottles: CAD\$0.005 (€0.003, USD\$0.0034) All other containers: CAD\$0.02 (€0.013, USD\$0.014)	None
Saskatchewan	Refillable beer bottles: CAD\$0.026 (€0.017, USD\$0.018) All other containers: none	SK does not charge handling fees. SARCAN depots are paid a contracted rate per year, which is generated through the Environmental Handling Charge (EHC). A handling fee on refillable beer is charged at the back-end from the refund. It is 5-cents at SARCAN depots and 2-cents at SLGA stores who also receive an additional subsidy of 2.6-cents per refillable bottle from brewers.
Yukon	Refillable beer bottles: CAD\$0.025 (€0.016, USD\$0.017) All other containers: CAD\$0.025 (€0.016, USD\$0.017) to CAD\$0.075 (€0.048, USD\$0.052)	None
South Australia	Approximately AUD\$0.1109 (€0.061, USD\$0.066)	Negotiated between producer/super collector.
Northern	Not available	Handling fees are negotiated. Depots

Jurisdiction	Handling Fee (per container)	Notes
Territory		may be compensated for “reasonable costs” related to handling the containers by the deposit Scheme Coordinator to whom they deliver the container.
Australian Capital Territory (ACT)	Estimated at around AUD\$0.08 (€0.044, USD\$0.047) to \$0.09 (€0.049, USD\$0.053)	For every container returned through the collection infrastructure, the Network Operator receives a fee to cover the costs for the collection points, the logistics, counting centres and administration, as well as adding a certain margin. The value of this fee has not been made public.
New South Wales	Estimated at around AUD\$0.08 (€0.044, USD\$0.047) to \$0.09 (€0.049, USD\$0.053)	For every container returned through the collection infrastructure, the Network Operator receives a fee to cover the costs for the collection points, the logistics, counting centres and administration, as well as adding a certain margin. The value of this fee has not been made public.
Queensland	Approximately AUD\$0.06 (€0.033, USD\$0.036) to AUD\$0.065 (€0.036, USD\$0.038)	Paid to collection points The Scheme Coordinator manages and pays separate fees for logistics and processing services (approximately AUD\$0.09 (€0.049, USD\$0.053), including collection, transport, processing).
Israel	0.05 ILS (€0.013, USD\$0.28)	Paid to retailers only.
Kosrae (Federated States of Micronesia)	USD\$0.01 (€0.0093)	None
Kiribati	AUD\$0.01 (€0.055, USD\$0.0059)	Retained by the Koaki Mange operator for operating costs.
Palau	USD\$0.025 (€0.023) to redemption centres USD\$0.025 (€0.023) to the national government for administrative costs	None

## Appendix D New Zealand Container Return Scheme Managing Agency requirements

**Table 36: New Zealand Container Return Scheme Managing Agency Requirements**

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
<b>Section 3</b> <b>Scope of Containers</b>	<p>The container return facility to have the discretion to reject containers based on material identification and in accordance with the requirements of the Managing Agency and NZ CRS legislative instrument, including but not limited to:</p> <ul style="list-style-type: none"> <li>• Broken containers.</li> <li>• Damaged but intact (e.g., a container that is returned to a container return facility that is so damaged or in such a condition that the scheme label and/or barcode and/or QR code and/or other scheme identification label cannot be verified or recognised).</li> <li>• Label missing but identifiable as an eligible container.</li> <li>• Contaminated with substances that make the container a health risk or unsuitable for recycling.</li> <li>• There are reasonable grounds that the container was not sold in Aotearoa New Zealand.</li> <li>• There are reasonable grounds that the container was part of a bale.</li> </ul>	<p>The benefit of this approach is to ensure that container return facilities provide the NZ CRS with the first line of contamination and fraud assessment supporting the collection and verification of material that meets the specific scheme conditions of acceptance.</p>
	<p>Suppliers that intend to sell (export) eligible containers outside of New Zealand will be eligible for a refund of the scheme deposit with the Managing Agency establishing and implementing appropriate mechanisms to accurately and transparently recorded export exemptions for audit and scheme compliance.</p>	<p>The reason why this is good for the NZ CRS is that those beverage containers to be exported from New Zealand will not be purchased and consumed by New Zealand consumers, and will not contribute to New Zealand's recovered material volumes.</p>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
<p><b>Section 4</b></p> <p><b>Container Return Facilities</b></p>	<p>Sufficient container return facilities will be located across Aotearoa New Zealand at suitable locations to enable customers to redeem their containers in a secure and efficient manner with minimal transaction times and at the same time ensure the return facilities are cost-effective and financially viable. Based on learnings from overseas, feedback from the design process and the outputs from financial modelling it is proposed that the NZ CRS initially establish 415 (i.e., a projected population of 5.213million as at 2023 and a ratio of 12,500 people per container return facility) registered container return facilities across Aotearoa New Zealand noting that each of the 415 registered sites are anticipated to have informal drop-off points located to increase customer convenience and provide additional volumes of containers to improve financial viability. The NZ CRS Managing Agency will be required to monitor the performance of each geographical area such as containers returned as a proportion of what is available in the area and take appropriate action as required. This action would include working with container return facilities, establishing more return sites and increasing awareness. It is further recommended that no later than 9-months before the scheme commences a final review is undertaken by the regulatory authority to confirm if the establishment of 415 container return facilities is still appropriate.</p>	<p>Ensuring sufficient access to collection points throughout Aotearoa New Zealand is important to ensure the NZ CRS provides a service to all New Zealanders regardless of where they reside (e.g., rural, urban, city) whilst also providing consumers a range of locations that they can access and use that compliments their day-to-day activities. At the same time, it is important that the collection point sites are financially viable and cost-effective.</p>
	<p>Container refund options must include cash, electronic funds transfer, supermarket voucher (including, for example, a 2-year expiration date) and donation. The</p>	<p>The reason why this is good for New Zealanders is to provide consumers with a range of options to receive the appropriate container refund amount rather than limiting these options.</p>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	<p>scheme Managing Agency will be empowered to have flexibility to expand the range of refund options such as a scheme credit system, loyalty card and gift cards). Alternative refund options must be supported by robust information (e.g., consumer surveys) and in consultation with the scheme Governance Board and the Government department responsible with scheme oversight.</p>	
	<p>The Managing Agency will give effect to ensuring that container return facilities are located strategically to promote customer convenience (e.g., supermarkets, petrol stations, co-located with community recycling facilities) and access points (e.g., transportation routes).</p>	<p>The benefit of this approach is to provide consumers with a convenient service that individuals can easily interact with while supporting, for example, local businesses (e.g., supermarkets, retail stores).</p>
	<p>Container return facilities must provide customers with scheme information, for example, scheme updates, in line with the marketing and communication requirements as determined by the Managing Agency and in bi-lingual and multi-lingual options.</p>	<p>The reason why this is good for the NZ CRS and Aotearoa New Zealand is to apply a consistent style of messaging across all registered scheme container return facilities supporting clear and transparent messaging to consumers. It is acknowledged that container return facilities may from time to time need to update consumers quickly on matters such as technology breakdowns but that in all cases, any change to a service provided by a scheme registered container return facility must be immediately raised with the Managing Agency to then determine whether additional public notification, for example, via the scheme website must be undertaken.</p>
	<p>The Managing Agency is required to give effect to ensuring and establishing consistent marketing of the container return facilities (e.g., marketing toolkit, standards) and scheme awareness.</p>	<p>The benefit of this approach to Aotearoa New Zealand is to ensure all scheme participants have a clear understanding of their role and responsibilities and have access to scheme information tailored to their specific role.</p>
	<p>The Managing Agency will be responsible for the procurement of scheme container return facilities, including the incorporation of social and indigenous procurement elements, (e.g., establishment of</p>	<p>The reason why this approach is good for Aotearoa New Zealand is that the Managing Agency has the ability to manage all registered container return facilities under a consistent contractual arrangement setup which may</p>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	employment number targets for manual collection depots).	include, for example, workplace employment targets.
	All container return facilities must be registered with the Managing Agency.	The benefit of this approach is primarily driven by the Managing Agency’s ability to track registered scheme containers and scheme participants to minimise scheme fraud and maximise scheme compliance. Additionally, registration of container return facilities will enable the Managing Agency to provide the consumer with a consistent service managed, for example, through consistent branding and scheme messaging.
	The Managing Agency will be responsible for ensuring best practice design guidelines are established for all container return facilities, including health and safety, operating and environmental management principles.	The benefit of this approach for the NZ CRS and New Zealanders is to set the minimum requirements to be met by a container return facility, including construction requirements, scheme branding and messaging, to support the establishment of a scheme that provides a customer focussed experience and maximising scheme efficiencies.
	Collection depots will cater for immediate counting and provision of customer refunds as stipulated by the Managing Agency (including cash, electronic funds transfer, supermarket voucher [including an appropriate expiration date], donation, scheme credit system, loyalty card, gift card) for eligible containers.	The benefit of this approach is that the depot can count and verify scheme eligible material returned by consumers and then refund the appropriate amount immediately with no time delay to the consumer.
	<p>Manual collection depot will have the option to refuse to accept a customer’s containers where containers do not meet the container acceptance criteria as specified by the Managing Agency and included in the NZ CRS legislative instrument, including but not limited to:</p> <ul style="list-style-type: none"> <li>• Unclean or contaminated;</li> <li>• The refund marking is illegible or not visible;</li> <li>• Not labelled according to the NZ CRS scheme (e.g.,</li> </ul>	The benefit of this approach is to ensure that returned containers meet the scheme acceptance criteria in order to be eligible for the appropriate refund amount. Additionally, the acceptance criteria is a means for the scheme to monitor and manage fraudulent activities and supporting the collection of clean material for re-processing.



	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	<p>were not sold in New Zealand); or</p> <ul style="list-style-type: none"> <li>If a person refuses to complete a declaration when asked to do so by the depot operator.</li> </ul>	
	<p>The Managing Agency will give effect to establishing clear processes, guidance for procuring and establishing container return facilities and Material Consolidation Facilities</p>	<p>The reason this is good for the NZ CRS is to acknowledge container return facilities located in regional/remote areas of New Zealand where the cost of transporting unbaled scheme containers may prove to be financially inefficient.</p>
	<p>The Managing Agency will give effect to promoting and encouraging the establishment of Over-the-Counter return locations in areas where other return facilities are not suitable, including but not limited to the following limitations:</p> <ul style="list-style-type: none"> <li>Over-the-Counter returns limited to accepting small quantities (e.g., less than 100 eligible containers per customer).</li> <li>Limit customer refund options to cash only or voucher for use in store.</li> <li>Over-the-Counter conditions set by the Managing Agency (e.g., store location, minimum sales area, storage capacity, store security).</li> </ul>	<p>Incorporating an over-the-counter container return facility option into the NZ CRS will assist in providing consumers with an additional option to return containers to, while, for example, also supporting small communities in rural and/or remote locations to provide a convenient local service to their resident base.</p>
	<p>The Managing Agency will give effect to promoting and encouraging the provision for mobile and/or pop-up return facilities (e.g., events, service provision for Universities, schools, etc) to increase container recovery.</p>	<p>Mobile and/or pop-up facilities will assist in providing localised services to areas where, for example, consumers may not have the ability and/or means to travel to another facility for a direct container count and refund or provide a bespoke collection service to activities that may require this</p>
	<p>The Managing Agency will give effect to promoting and encouraging the unmanned mobile or pop-up facilities to offer the option of electronic funds transfer, or transfer of scheme credits to loyalty schemes or other options as</p>	<p>The benefit of this option is to provide consumers with another option with which to return their eligible containers whilst supporting the Managing Agency to reduce, for example, theft of cash from unmanned facilities whilst</p>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	<p>appropriate. No cash to be provided.</p> <p>The Managing Agency will give effect to actively promoting the location of reverse vending machines to be connected to areas of customer convenience, for example:</p> <ul style="list-style-type: none"> <li>• Public transport facilities, bus inter changes, ferry terminals.</li> <li>• Education establishments including universities and schools.</li> <li>• Marae and Resource Recovery Centres.</li> <li>• Parks and nature reserves, barbecue areas.</li> <li>• Retail premises such as supermarkets, shopping malls, wholesale retailers.</li> <li>• Retail parking lots, major multi-storey parking lots.</li> <li>• Standalone (e.g., carparks) and/or inbuilt machines to accept eligible containers.</li> <li>• Acceptance of eligible containers by type (i.e., glass, plastic, aluminium/tin) and refillable containers (i.e., acceptance by individual bottle and/or crates).</li> <li>• Machines to be of various sizes to cater to retail store specifications.</li> <li>• Consideration given to material compression and relationship to scheme fraud prevention measures.</li> <li>• Machines to provide marketing opportunities where sited (e.g., retail location, schools, local council main office).</li> </ul>	<p>still providing a convenient service to the consumer.</p> <p>The benefit of providing RVMs in a range of locations is primarily to provide the consumer with convenient options with which to return their eligible containers for the appropriate refund.</p>
	<p>The Managing Agency will, through contractual arrangements with container return facilities, give effect</p>	<p>The benefit of this approach is primarily driven to maximise consumer convenience whilst minimising the likelihood of litter disposal of those</p>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	to ensuring that machines accepting both eligible and ineligible containers does not result in potential littering of rejected containers (NOTE: consideration must be given to potential misuse of machine as an alternative means of disposal).	ineligible containers particularly where container return facilities are unmanned (e.g., mobile and/or pop-up facilities).
	The Managing Agency will give effect to promoting and provide for container return facilities focussed on donations only at locations such as bus/train/ferry stations, Council main offices, zoos.	The benefit of this approach is primarily driven to maximise consumer convenience for those consumers who may wish to simply return containers with the appropriate refund to be allocated to a specific charity(ies) as supported by the facility (e.g., a RVM placed at a zoo with refunds to support zoo wildlife initiatives).
	The Managing Agency will, during the implementation phase, give effect to stipulating a maximum container limit for automated depots.	The reason why this is good for the NZ CRS and Aotearoa New Zealand is to provide additional infrastructure to manage large quantities of eligible containers that the container return facilities may otherwise not have the capacity to manage.
	The Managing Agency will be responsible for managing the establishment of collection service contracts (e.g., contracted back-haul arrangements) to deliver the service needed to transport eligible scheme containers from the container return facility to the scheme Material Consolidation Facility.	The establishment of transportation service contracts will ensure that the NZ CRS benefits from a consistent service ensuring that eligible containers are moved efficiently between scheme participants.
	The Managing Agency will be responsible for ensuring the utilisation of appropriate transportation logistics providers and/or back-haul arrangements are cost-effective and efficient and reduce the carbon footprint, including for remote/regional areas.	The benefit of this approach to Aotearoa New Zealand is to support New Zealand’s goal to reduce greenhouse gas emissions and progress New Zealand’s obligations under the Kyoto Protocol. The added benefit is to utilise existing infrastructure to support scheme activities whilst encouraging scheme employment.
	The Managing Agency to establish appropriate fraud mitigation processes and procedures to manage and track the flow of eligible containers through the scheme (i.e.,	The benefit of this is to ensure the scheme Managing Agency has complete visibility and transparency of the eligible containers moving throughout the

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	<p>container return facilities, transportation to material processing facilities, transportation to re-processors and/or direct to end-markets).</p>	<p>scheme, as well as tracking scheme finances against eligible container count.</p>
	<p>The Managing Agency may approve baling of scheme material (e.g., plastic, aluminium) on a case by case basis at selected container return facilities where it is demonstrated that these facilities would contribute to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. To achieve this, the Managing Agency will establish a scheme baling and audit process based on robust standards and procedures, including, for example, a contractual ‘Baling Services Agreement’ between the Managing Agency and the container return facility. This agreement will be supported by robust standards and procedures such as Standard Operating Procedures that the container return facility must contractually abide by. Additionally, the baling process will be standardised across the scheme so that the same baling process (i.e., weight and size of bale) is used at the container return facility and the scheme MCF ensuring consistency of methodology and minimisation of fraud.</p>	<p>The benefit presented by baling at container return facilities is the ability for the Managing Agency to use existing infrastructure whilst contractually managing the expansion of the facility’s role and responsibility. Additionally, this approach will support the establishment of regional/remote New Zealand collection facilities to also bale and transport material to end-markets under contract with the Managing Agency, thereby improving scheme efficiencies such as transportation of loose material (i.e., payload efficiencies). Further, the Managing Agency is best placed to establish and manage the ‘Baling Services Agreement’ and the supporting Standard Operating Procedures in order to track scheme material and minimise fraud.</p>
	<p>The Managing Agency will also approve compaction of scheme material (e.g., plastic, aluminium) at selected container return facilities where it is demonstrated that these facilities would contribute to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. To achieve this, the Managing Agency will determine the optimised compaction ratio that enables the scheme MCF to re-</p>	<p>The benefit of this approach is the ability of regional/remote Aotearoa New Zealand collection facilities to reduce costs associated with transporting materials to the scheme MCF. Further, the Managing Agency is best placed to manage setting compaction ratios in order to track eligible containers and minimise fraud.</p>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	count and verify eligible scheme containers.	
	The Managing Agency will give effect to setting of an appropriate handling fee including reviews of the handling fee at intervals to ensure the viability of collection depots and scheme performance.	The reason why this is beneficial for Aotearoa New Zealand is primarily for the Managing Agency to compensate those scheme participants responsible for handling and sorting eligible containers and ensure that their respective activities remain profitable to ensure service continuation.
	All scheme material sold to markets will be owned by the Managing Agency.	The reason why this is good for Aotearoa New Zealand is that the Managing Agency is in the best position to manage this risk and promote the beneficial use of material over the long term. This is beneficial for the New Zealand environment as it will encourage the supply of scheme materials to New Zealand based manufacturers. The Managing Agency may, for example, enter long-term supply arrangement with material re-processors that results in certainty of supply to enable and assist investment in infrastructure.
	Revenue generated by the sale of eligible scheme material to be passed on via the Advanced Material Recycling Fee to beverage producers to reflect the choice of container materials used.	The reason why this is good for Aotearoa New Zealand is that the Managing Agency is in the best position to manage the risk and promote the beneficial use of material over the long term as well as share the benefit of this with both beverage producers and consumers. This is beneficial for the New Zealand environment as it will encourage the reuse of scheme materials with a priority focus on New Zealand based manufacturers.
	The Managing Agency will be responsible, through contractual arrangements, for ensuring container return facilities report key scheme performance data in keeping with scheme reporting requirements.	The benefit of this requirement to Aotearoa New Zealand is to ensure the container return facility provides to the Managing Agency clear and transparent information on the efficiency and performance of the scheme whilst highlighting areas of improvement.
	The Managing Agency is responsible for the integration of a separate financial accounting system and Information and Communications Technology (ICT) platform to manage scheme costs.	The benefit of this approach for a NZ CRS is to enable the Managing Agency to have complete transparency and visibility of containers received, processed, transported and the value of deposits issued to consumers as they relate to the successful functioning and performance of the scheme.
<b>Section 5</b>	Hospitality businesses (e.g., hotels, restaurants, bars,	The benefit of this approach to the NZ CRS and New Zealand is to ensure

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
<p><b>The Retailer</b></p>	<p>cafés and take-aways) will be included within the NZ CRS design with the Managing Agency responsible for establishing the specific scheme requirements for those businesses selling eligible scheme containers for both onsite and offsite consumption.</p>	<p>those eligible scheme containers moving through hospitality businesses are recovered and recycled by the NZ CRS. Additionally, the Managing Agency is provided the flexibility to establish scheme specific arrangements, for example, collection of containers that support the ultimate success of the scheme.</p>
	<p>The Managing Agency in consultation with the retail sector will establish a suitable transition period and deadline for compliance to help retailers transition old stock and ensure enough time is available to stock with eligible containers before the end of the transition period.</p> <p>The purpose of a transition period to New Zealand retailers is to ensure retailers are provided enough time to adjust to scheme requirements including the transition from old stock to new stock and to establish new processes where needed. Trans-Tasman arrangement specific to movement of eligible containers including other relevant international arrangements (i.e., import and export considerations) without comprising the outcomes of the NZ CRS (e.g., the NZ deposit amount).</p>	<p>The reason why this is good for New Zealand is to ensure that all relevant legislation and regulations are assessed to ensure all legal components have been addressed and accounted for to support the implementation of the NZ CRS and the ultimate success of the scheme.</p>
	<p>The Managing Agency is to determine the arrangements for leasing and/or purchasing RVMs.</p>	<p>The benefit of this approach is to enable retailers to potentially benefit from any contractual technology supply arrangements as established by the Managing Agency with relevant equipment providers.</p>
	<p>The Managing Agency is to provide marketing material and standards (e.g., marketing toolkit, Te Reo Māori and multi-lingual translations) to ensure consistent communications are established between retailer, scheme and customers.</p>	<p>The reason why this is good for the NZ CRS and New Zealand is to apply a consistent style of messaging across all participating retailers supporting clear and transparent messaging to consumers. Additionally, to ensure all scheme participants have a clear understanding of their role and responsibilities and have access to scheme information tailored to their specific role.</p>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	<p>The Managing Agency will determine the specific return-to-retail contractual arrangements, which may include:</p> <ul style="list-style-type: none"> <li>• Recognising deposit labels and eligible containers.</li> <li>• Inspecting packaging and barcodes to ensure that they are intact.</li> <li>• Refunding the correct deposit amount.</li> <li>• Sorting the collected containers correctly.</li> <li>• Reporting requirements on the empty containers that they collect and refund.</li> <li>• Recording of accounting, drop offs and collections.</li> <li>• Additional costs on retailers.</li> <li>• Site logistic requirements.</li> <li>• Modification requirements to the retailer.</li> <li>• Impacts on health and safety.</li> </ul>	<p>The reason why this approach is good for New Zealand is that the Managing Agency has the ability to manage all registered container return facilities (including return-to-retail) under a consistent contractual arrangement setup which may include, for example, site logistical requirements.</p>
<p><b>Section 6</b> <b>The Consumer</b></p>	<p>The Managing Agency will be responsible for providing clear and accessible information to ensure consumers have a good understanding of the scheme, its kaupapa - purpose, its benefits to them, and where and how they can return eligible container.</p>	<p>The reason why this is good for the NZ CRS and New Zealand is to provide consumers with clear scheme information to support individuals to make informed decisions and choices whilst providing clarity on which single-use beverage containers are included in the scheme and which are not.</p>
	<p>The Managing Agency will be responsible for ensuring consumers have access to return their eligible containers in a secure, convenient and efficient manner with minimal wait and transaction times in keeping with best practice and at the same time ensure the return facilities are cost-effective and financially viable. Based on learnings from overseas, feedback from the design process and the outputs from financial modelling it is proposed that the NZ CRS initially establish 415 (i.e., a</p>	<p>Ensuring sufficient access to collection points throughout New Zealand is important to ensure the NZ CRS provides a service to all New Zealanders regardless of where they reside (e.g., rural, urban, city) whilst also providing consumers a range of locations that they can access and use that compliments their day-to-day activities. At the same time, it is important that the collection point sites are financially viable and cost-effective.</p>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	<p>projected population of 5.213million as at 2023 and a ratio of 12,500 people per container return facility) registered container return facilities across Aotearoa New Zealand noting that each of the 415 registered sites are anticipated to have informal drop-off points located to increase customer convenience and provide additional volumes of containers to improve financial viability. The NZ CRS Managing Agency will be required to monitor the performance of each geographical area such as containers returned as a proportion of what is available in the area and take appropriate action as required. This action would include working with container return facilities, establishing more return sites and increasing awareness. It is further recommended that no later than 9-months before the scheme commences a final review is undertaken by the regulatory authority to confirm if the establishment of 415 container return facilities is still appropriate.</p>	
	<p>The Managing Agency will give effect to ensuring that container return facilities are located strategically to promote customer convenience (e.g., supermarkets, petrol stations, co-located with community recycling facilities) and access points (e.g., transportation routes).</p>	<p>The benefit of this approach is to provide consumers with a convenient service that individuals can easily interact with while supporting, for example, local businesses (e.g., supermarkets, retail stores).</p>
	<p>The Managing Agency will be responsible for promoting and enabling employment and education (e.g., school certificates, pre-school engagement) and life skill (e.g., budgeting skills) opportunities through the container return scheme (e.g., opportunities provided for at manual container return facilities).</p>	<p>The benefit of these NZ CRS services to New Zealand is the ability to create increased social good within communities by encouraging and facilitating improved social connections. Additionally, these services may facilitate wider opportunities such as the establishment of school-based waste and resource management curriculum supported by NZ CRS education programs.</p>
<p><b>Section 7</b></p>	<p>The Managing Agency will contract the scheme Material</p>	<p>The reason why this is appropriate for the NZ CRS design is that contracting</p>



	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
<p><b>Material Processing Facilities</b></p>	<p>Consolidation Facility. By exception it may directly own and operate these. All scheme material sold to markets will be owned by the Managing Agency. For clarity, where the processing facility is based on utilising an existing MRF then the contractual arrangement would reflect the appropriate delineation of that site to ensure separation of existing sorting activities and materials from the NZ CRS.</p>	<p>the services of the scheme MCF by the Managing Agency will minimise the risk of fraud, maximise the use of existing infrastructure, maximising the number of MCFs around Aotearoa New Zealand and minimising the scheme carbon footprint.</p>
	<p>Where appropriate and practicable, the Managing Agency will give effect to prioritising the use of existing infrastructure in Aotearoa New Zealand to reduce scheme costs and maximise the opportunity for reuse.</p>	<p>Incorporating where possible, Aotearoa New Zealand’s existing infrastructure (e.g., TLA owned/contracted resource recovery infrastructure), will assist in establishing a cost-efficient scheme whilst ensuring recognition of businesses already providing relevant services.</p>
	<p>The Managing Agency will give effect to the incorporation of direct and/or weight-based container counting methodology at scheme material processing facilities (i.e., MCF, MRF, general refuse processing facilities). There is no benefit to limit the options at this stage in the design process. The Managing Agency will have maximum flexibility on options that it determines is best for specific situations. A key area with manual method is a condition that regular auditing must be undertaken to ensure payments made to collection depots reflects the weight to count ratio.</p>	<p>Enabling the Managing Agency to have flexibility in specifying the scheme eligible container counting methodology will support a wider range of solutions based on available Aotearoa New Zealand infrastructure.</p>
	<p>The Managing Agency to establish appropriate fraud mitigation processes and procedures to manage and track the flow of eligible containers through the scheme (i.e., container return facilities, transportation to material processing facilities, transportation to re-processors and/or direct to end-markets)</p>	<p>The benefit of this is to ensure the scheme Managing Agency has complete visibility and transparency of the eligible containers moving throughout the scheme, as well as tracking scheme finances against eligible container count.</p>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	<p>The Managing Agency may approve baling of scheme material (e.g., plastic, aluminium) on a case by case basis at selected container return facilities where it is demonstrated that these facilities would contribute to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. To achieve this, the Managing Agency will establish a scheme baling and audit process based on robust standards and procedures, including, for example, a contractual ‘Baling Services Agreement’ between the Managing Agency and the container return facility. This agreement will be supported by robust standards and procedures such as Standard Operating Procedures that the container return facility must contractually abide by. Additionally, the baling process will be standardised across the scheme so that the same baling process (i.e., weight and size of bale) is used at the container return facility and the scheme MCF ensuring consistency of methodology and minimisation of fraud.</p>	<p>The benefit presented by baling at container return facilities is the ability for the Managing Agency to use existing infrastructure whilst contractually managing the expansion of the facility’s role and responsibility. Additionally, this approach will support the establishment of regional/remote Aotearoa New Zealand collection facilities to also bale and transport material to end-markets under contract with the Managing Agency, thereby improving scheme efficiencies such as transportation of loose material (i.e., payload efficiencies). Further, the Managing Agency is best placed to establish and manage the ‘Baling Services Agreement’ and the supporting Standard Operating Procedures in order to track scheme material and minimise fraud.</p>
	<p>The Managing Agency may also approve compaction of scheme material (e.g., plastic, aluminium) at selected container return facilities where it is demonstrated that these facilities would contribute to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. To achieve this, the Managing Agency will determine the optimised compaction ratio that enables the scheme MCF to re-count and verify eligible scheme containers.</p>	<p>The benefit of this approach is the ability of regional/remote Aotearoa New Zealand collection facilities to reduce costs associated with transporting materials to the scheme MCF. Further, the Managing Agency is best placed to manage setting compaction ratios in order to track eligible containers and minimise fraud.</p>
	<p>The Managing Agency will be responsible for managing the establishment of collection service contracts and/or</p>	<p>The establishment of transportation service contracts will ensure that the NZ CRS benefits from a consistent transportation service.</p>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	<p>agreements (e.g., contracted back-haul arrangements, transportation of material by the material purchaser) to be managed by the Managing Agency to deliver the service needed to transport eligible scheme containers from the scheme Material Processing Facility and either the scheme Material Consolidation Facility, material re-processor or direct to end-markets.</p>	
	<p>The Managing Agency to establish processes to audit scheme eligible glass container return rates collected via kerbside recycling collections to support appropriate MRF glass material handling fee claims.</p>	<p>Acknowledging the likelihood of glass breakage in kerbside collections, enabling the Managing Agency to audit kerbside collection bins for scheme eligible glass container return rates will benefit the NZ CRS by ensuring the Managing Agency can verify MRF claims.</p>
	<p>The Managing Agency to establish criteria to determine weight-based assessment.</p>	<p>The benefit to Aotearoa New Zealand is that the Managing Agency establishes a consistent weight-based assessment tool.</p>
	<p>The Managing Agency to establish a scheme MCF, MRF and General Refuse Processing Facility protocol, including all auditing requirements and determine a protocol review period.</p>	<p>The benefit of this approach for a NZ CRS is to enable the Managing Agency to have complete transparency and visibility of scheme material processing facility operations as they relate to the successful functioning of the scheme.</p>
	<p>The Managing Agency to establish clear and consistent collection, quality control and auditing processes integrating all scheme participants to maintain material quality.</p>	<p>The benefit of this approach to a NZ CRS is to ensure that the Managing Agency coordinates and manages all scheme participants to ensure integrity of the scheme to ensure accurate and auditable count of containers and payment to collection depots.</p>
	<p>The Managing Agency to support the establishment of a revenue sharing arrangement (deposit or handling fee amount, including a transitional period) underpinned by clear guidelines (e.g., the default position could have the deposit shared 50/50 between the MRF and the Territorial Local Authority making sure no party is disadvantaged nor gains a windfall from the NZ CRS with</p>	<p>The benefit to Aotearoa New Zealand is to ensure that scheme funds generated from council kerbside recycling collections is appropriately shared with the MRF in recognition of the respective contractual commitments and to incentivise continual operational improvements related to the collection and sorting of eligible scheme containers.</p> <p>It is recommended that further detailed analysis is undertaken to determine</p>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	<p>any surplus returned to the ratepayer) between the local council and the MRF for eligible containers collected via kerbside recycling collections. It is recommended each Territorial Local Authority and MRF operator undertake their own negotiations (excluding the involvement of the Managing Agency) and reach agreement on revenue sharing as this recognises the different contractual arrangements that exist across Aotearoa New Zealand. It is recommended that local authorities use the opportunity of recognising revenue from containers in the recycling bin to offset recycling collection costs incurred by ratepayers. The reason for this is to incentivise the MRF operator to make all appropriate efforts to separate out eligible and redeem containers (in accordance with the scheme container acceptance criteria). Notwithstanding any contractual requirements between MRF operators and local councils it is recommended that a revenue sharing arrangement be established between the local council and the MRF. The revenue sharing arrangement is to be established and set at a level that will support kerbside recycling and incentivise the MRF to fund processing and maximise recovery of eligible containers.</p>	<p>if the revenue sharing is based on the deposit value or the handling fee, but not both. The detailed analysis would be undertaken to reflect the different collection types, MRF operations, capital investments and scale of these and financial viability across Aotearoa New Zealand to ensure the revenue sharing is fair and reasonable and does not result in unintended consequences or perverse outcomes for the NZ CRS.</p> <p>The default position would be sharing of the deposit value.</p>
	<p>The Managing Agency to establish requirements for refunds associated with eligible containers recovered from kerbside collected general refuse via waste transfer stations (i.e., those facilities that do not allow public refuse drop-off).</p>	<p>The benefit to Aotearoa New Zealand is to ensure that scheme funds generated from council kerbside refuse collections is appropriately shared with the waste transfer station in recognition of the respective contractual commitments and to incentivise continual operational improvements related to the collection and sorting of eligible scheme containers to maximise recovery.</p> <p>Maximising the recovery of eligible scheme containers that meet the conditions of acceptance as specified by the scheme requirements (e.g.,</p>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
		clean, scheme barcode and/or logo is visible and legible).
	The Managing Agency to ensure that all scheme material sold to markets will be owned by the Managing Agency	The reason why this is good for Aotearoa New Zealand is that the Managing Agency is in the best position to manage this risk and promote the beneficial use of material over the long term. This is beneficial for the Aotearoa New Zealand environment as it will encourage the supply of scheme materials to Aotearoa New Zealand based manufacturers. The Managing Agency may, for example, enter long-term supply arrangement with material re-processors that results in certainty of supply to enable and assist investment in infrastructure.
<b>Section 8</b> <b>The Material Re-Processor</b>	The Managing Agency, as owner of the recovered scheme material, will give effect to and ensure that all recovered material is beneficially reused through measures such as legislative drivers, establishment of long-term contractual arrangements, encourage the use of scheme recycled material for the production of containers, ensure scheme material can have adequate quality to be used again for food packaging, undertake regular inspections of approved scheme re-processors ensuring that minimal scheme material is wasted.	The benefit of this approach to Aotearoa New Zealand is that the NZ CRS promotes a holistic end-to-end solution requiring the Managing Agency to take ownership and accountability of the end fate of scheme material and the Managing Agency is enabled to promote the outcomes of the pūnaha whakarōpū para - waste hierarchy.
	The Managing Agency will work with the material re-processor to optimise scheme collection and sorting methodologies to lift material quality.	The reason why this is good for Aotearoa New Zealand is to require scheme participants and associated industries to carry out more robust sorting and collection of materials to reduce contamination levels whilst encouraging the production of higher value products (e.g., PET flakes and PET pellets) for sale to markets and material re-processors.
	The Managing Agency controls and/or has full transparency of the end fate of scheme materials (i.e., closed loop system) via, for example, contractual relationships or competitive tendering processes with re-processors (e.g., long-term contracts, process to achieve	The benefit to Aotearoa New Zealand is ensuring that scheme material is, where possible (noting recycled scheme material may also be sold and exported to offshore markets) recycled in a closed-loop cycle with the Managing Agency promoting the use of 'bottle to bottle' and 'can to can' processes, whilst promoting and supporting onshore material re-processing

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	market rates with known contracted parties), encouraging minimum scheme recycled material for the production of containers, re-purposing of materials, ensure scheme material can have adequate quality to be used again for food packaging, undertaking regular inspections of approved scheme re-processors ensuring that minimal scheme material is wasted.	activities and investments in infrastructure.
	The Managing Agency to optimise the establishment of contractual arrangements to include material end fate and recyclability requirements of scheme material.	The reason why this is good for Aotearoa New Zealand is that the Managing Agency will encourage and promote Extended Producer Responsibility through the use of an Advanced Material Recycling Fee to ensure producers cover the true cost to beneficially use their respective container materials. This approach will also help encourage producers to move to more recyclable materials, thereby promoting and delivering the objectives of the scheme.
	The Managing Agency to undertake regular audits and inspections of the material re-processor to ensure minimal scheme material is wasted and scheme material is recycled in accordance with contractual agreements.	The benefit of this approach for a NZ CRS is to enable the Managing Agency to have complete transparency and visibility of operations as they relate to the successful functioning of the scheme.
	The Managing Agency to utilise back-haul transportation relationships where possible to reduce the carbon dioxide emissions from transporting scheme beverage containers to material re-processors or end-markets.	The benefit of this approach to Aotearoa New Zealand is to support Aotearoa New Zealand’s goal to reduce greenhouse gas emissions and progress New Zealand’s obligations under the Kyoto Protocol. The added benefit is to utilise existing infrastructure to support scheme activities whilst encouraging scheme employment.
	<p>The Managing Agency will promote and encourage the development of the refillables market through options including, but not be limited to:</p> <ol style="list-style-type: none"> <li>1. Funding and promoting the benefit and awareness of refillables as a preferred choice to New Zealanders.</li> </ol>	<p>This is in alignment with the three (3) key project outcomes as discussed in Section 1 and noted below:</p> <ol style="list-style-type: none"> <li>1. Change the way New Zealand values beverage containers that will see increased recycling and new opportunities for refilling;</li> <li>2. Reduce the volume of plastics and other container litter currently ending</li> </ol>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	<ol style="list-style-type: none"> <li>2. Working closely with existing and future New Zealand refillable schemes to identify and remove barriers to their growth, irrespective of whether existing or future refillable schemes choose to be included within a NZ CRS or not. This approach recognises and provides for individual companies to manage and promote their own unique refillable containers and where companies may wish to share a universal bottle.</li> <li>3. Further to item 2, investment in, or funding of, infrastructure by addressing and removing barriers such as the return, re-washing and refilling of bottles.</li> <li>4. Ensuring that the method of return by customers is convenient, accessible and where appropriate and practicable is compatible with existing NZ CRS container return facilities.</li> <li>5. Establishment of NZ CRS container return facilities that, where practicable, can accept, sort and store for transportation both eligible single-use beverage containers and reusable beverage containers.</li> <li>6. Support and facilitate the uptake of reusables through the integration of strategic directives embedded within the NZ CRS scheme performance indicators.</li> <li>7. Securing the funding to achieve the above from the scheme fee.</li> </ol>	<p>up in our awa - waterways, moana - marine environment, wāhi tūmatanui - public spaces and ruapara - landfills; and</p> <ol style="list-style-type: none"> <li>3. Give effect to ōhanga āmiomio - circular economy outcomes and any future priority product guidelines.</li> </ol>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
<p><b>Section 9</b></p> <p><b>The Container Manufacturer</b></p>	<p>The Managing Agency to implement a transition period to help ensure that container manufacturers are given enough time to make the necessary changes to their containers to comply with regulations.</p>	<p>The benefit of a transition period to Aotearoa New Zealand container manufacturers is to ensure manufacturers are provided sufficient time to adjust to scheme requirements, as requested by the beverage producers, and establish new processes where needed.</p>
	<p>The Managing Agency to require as part of contractual obligations and/or key contractual performance indicators with beverage producers that contractual negotiations support the provision of post-consumer recycled scheme material to local container manufacturers.</p>	<p>The reason why this is good for Aotearoa New Zealand is that the Managing Agency will encourage and promote Extended Producer Responsibility by requiring where appropriate (e.g., safe to consumers) container manufacturers to use recycled scheme material in the production of new containers.</p>
	<p>The Managing Agency to require as part of contractual obligations and/or key contractual performance indicators with beverage producers that container manufacturers use and maximise the proportion of post-consumer recycled scheme material in the manufacturing of new containers as required by the beverage producers. The minimum proportion target of post-consumer recycled material to be based on best international practice.</p>	<p>The benefit to Aotearoa New Zealand is further investment and diversification in existing New Zealand re-processing capacity and encouragement in innovative solutions that support onshore employment opportunities.</p>
	<p>The Managing Agency to require as part of contractual obligations and/or key contractual performance indicators with beverage producers that, the use of post-consumer recycled scheme material in container manufacture be exempted if containers can be reused or refilled. The Managing Agency, working with the regulatory authority and industry to determine the number of times reuse and/or refill can occur to enact this exemption.</p>	<p>The reason why this is good for Aotearoa New Zealand is to encourage and facilitate further development and expansion of the refillable market.</p>



	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	<p>The Managing Agency to provide information to clearly set out any specific labelling requirements to help ensure container manufacturers are compliant.</p>	<p>The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.</p>
	<p>The Managing Agency to provide information to container manufacturers including an online portal to access training material, courses and specific scheme information.</p>	<p>The provision of information resources to container manufacturers is beneficial to a NZ CRS as it will provide the platform to ensure the provision of consistent messaging and the ability to address concerns quickly and efficiently.</p>
	<p>The Managing Agency to recommend regulations that stipulate technical specifications for containers manufactured or imported into Aotearoa New Zealand that give effect to maximising ōhanga āmiomio - circular economy outcomes and principles of kaitiakitanga whakanaonga - product stewardship are realised.</p>	<p>Taking on board the experiences and learnings from other countries, the benefit of this approach is to ensure container production and its impacts on the economy and environment is sustainable and reflects best practice</p>
	<p>The Managing Agency will be required to promote and develop the refillables market. Options to achieve this may include, but not be limited to:</p> <ol style="list-style-type: none"> <li>1. Investment in, or funding of, infrastructure by addressing barriers such as the return, re-washing and refilling of bottles.</li> <li>2. Working together with beverage companies to enable the method of return by customers is convenient and accessible.</li> <li>3. Working together with beverage companies to promote refillables including awareness and education.</li> <li>4. Working with beverage companies to promote both a universal and bespoke refillable bottle. Universal bottle here refers to a generic bottle that could be</li> </ol>	<p>This is in alignment with the three (3) key project outcomes as discussed in Section 1 and noted below:</p> <ol style="list-style-type: none"> <li>1. Change the way Aotearoa New Zealand values beverage containers that will see increased recycling and new opportunities for refilling;</li> <li>2. Reduce the volume of plastics and other container litter currently ending up in our awa - waterways, moana - marine environment, wāhi tūmatanui - public spaces and ruapara - landfills; and</li> <li>3. Give effect to ōhanga āmiomio - circular economy outcomes and any future priority product guidelines.</li> </ol>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	used by multiple beverage companies but each with their own unique label.	
<b>Section 10</b> <b>The Beverage Producer</b>	The Managing Agency to ensure that all eligible beverage containers to be registered with the Managing Agency.	The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers (i.e., both imported and locally produced) and to minimise scheme fraud.
	The Managing Agency to require for beverage producers to register eligible containers with the scheme in order to supply containers to the Aotearoa New Zealand market.	The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
	The Managing Agency to stipulate clear conditions of acceptance criteria for beverage producers.	The reason why this is good for Aotearoa New Zealand is that the Managing Agency is driven to encourage and promote Extended Producer Responsibility by putting in place measures to influence material type whilst also ensuring consistent scheme acceptance criteria are met.
	The Managing Agency to recommend appropriate container labelling requirements to be legislated and to include requirements for scheme verification such as a scheme logo, barcode and deposit amount.	The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
	The Managing Agency to undertake regular reviews of beverage containers and materials by undertaking huringa mataora – life-cycle analyses of these in keeping with the economic, environmental, social and cultural outcomes of the NZ CRS design. Reviews shall be undertaken at a frequency of at least once per three years.	The benefit to Aotearoa New Zealand is that the huringa mataora – life-cycle analysis can assess the beverage production process including the production and/or consumption of resources including knowledge of the energy consumption and carbon emissions associated, and where appropriate, the scheme can through appropriate processes and procedures seek to improve systems and processes.
	The Managing Agency to implement a transition period for beverage producers to make the necessary changes to their containers in order to comply with the regulations. The implementation period shall not be less than 9-	The benefit of a transition period to Aotearoa New Zealand container manufacturers is to ensure manufacturers are provided sufficient time to adjust to scheme requirements and establish new processes where needed.

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	months.	
	The Managing Agency to ensure contractual arrangements with beverage producers support the provision of minimum post-consumer recycled scheme material content in the manufacturing of new beverage containers.	The reason why this is good for Aotearoa New Zealand is that the Managing Agency will encourage and promote Extended Producer Responsibility by requiring container manufacturers to use recycled scheme material in the production of new containers in keeping with best international practice.
	The use of post-consumer recycled scheme material in container manufacture will be exempted if containers can be re-used or refilled. The Managing Agency, working with the regulatory authority and industry to determine the minimum number of times re-use and/or refill can occur to enact this exemption.	The reason why this is good for Aotearoa New Zealand is to encourage and facilitate further development and expansion of the refillable market.
	The Managing Agency to determine the scheme costs and appropriate cost recovery fees including but not limited to a product registration fee and disposal fee. Provide appropriate incentives to promote and encourage the use of post-consumer recycled scheme material in the manufacture of new containers.	The reason why this is good for Aotearoa New Zealand is that the Managing Agency will encourage and promote Extended Producer Responsibility through the application of fees including an Advanced Material Recycling Fee encouraging container manufacturers to use recycled scheme material in the production of new containers.
	The Managing Agency to provide information to clearly set out any specific labelling requirements to help ensure beverage producers are compliant with scheme requirements.	The benefit of this approach to Aotearoa New Zealand is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
	Beverage producers to provide the Managing Agency with monthly sales data to track scheme containers placed on to the market and those eligible containers returned.	The benefit of this approach to Aotearoa New Zealand is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud.
	The Managing Agency to take all necessary steps and actions as required to ensure compliance by all beverage	The benefit of this approach is primarily driven by the Managing Agency ensuring beverage producers comply with all scheme requirements

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	producers with the scheme requirements.	including those as specified in the bespoke NZ CRS legislative instrument. This will ensure data transparency supporting a cost efficient and effective scheme is provided to consumers.
<b>Section 11</b> <b>Scheme Financials</b>		
	The specific container return scheme legislative instruments to set a minimum eligible container return rate of 85% target is applied to the NZ CRS with interim annual container return targets (set at the anniversary date of the NZ CRS) of 60%-year-1 (12-months), 65%-year-2 (24-months), 70%-year-3 (36-months), 80%-year-4 (48-months), 85%-year-5 (60-months) set for the first five (5) years (60-months) of scheme operation. Thereafter, a return rate target of 85% will apply with an aspirational target of 95%.	The benefit of this approach is to acknowledge the build-up period from scheme start to when the scheme reaches the optimal eligible container return rate and enable the Managing Agency to engage with consumers through measures including, for example, targeted scheme consumer marketing and engagement campaigns.
	Implementation of regulated scheme review periods comprising of two (2) initial scheme review periods to assess scheme performance and operation (e.g., eligible scheme container return rates, consumer accessibility) and strategic direction set at the end of the year-3 (36-months) and year-5 (60-months) financial periods, then every 5-years (60-months) thereafter.	The benefit of two (2) interim scheme review periods is to enable sufficient time for the scheme to build towards optimal performance and enable the Managing Agency to assess the schemes performance, including, for example, the interim annual container return rate targets and the accessibility of a consumer focussed network of container return facilities. Regarding the specific scheme review triggers such as the deposit level, the following will apply and align with the above interim annual container return targets - if the return rates does not reach 70% within 36-months, 80% within 48-months or 85% within 60-months, whichever occurs first, the deposit shall automatically be increased to NZD20-cents. This is on the basis that the Managing Agency has explored other improvements to scheme performance including but not limited to increasing scheme awareness and the number of collection sites (along with any increase to the container handling fee to ensure collection sites remain viable) to improve convenience. Notwithstanding the above, the recommended deposit fee of NZD10-cents shall be reviewed by the government regulatory authority

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
		<p>(Manatū Mō Te Taiao - Ministry for the Environment) no later than 9-months prior to the scheme to confirm this as the correct starting deposit value.</p>
	<p>Scheme review trigger. The following will apply and align with the above interim annual container return targets - if the return rates does not reach 70% within 36-months, 80% within 48-months or 85% within 60-months, whichever occurs first.</p>	<p>The deposit shall automatically be increased to NZD20-cents. This is on the basis that the Managing Agency has explored other improvements to scheme performance including but not limited to increasing scheme awareness and the number of collection sites (along with any increase to the container handling fee to ensure collection sites remain viable) to improve convenience.</p> <p>Notwithstanding the above, the recommended deposit fee of NZD10-cents shall be reviewed by the government regulatory authority (Manatū Mō Te Taiao - Ministry for the Environment) no later than 9-months prior to the scheme to confirm 10-cents as the correct starting deposit value.</p>
	<p>A range of options for consumers to receive the deposit refund is provided for in the design of a NZ CRS, including cash, supermarket voucher (including, for example, a 2-year expiration date), donation, electronic funds transfer, other (e.g., scheme credit system, loyalty card, gift card). The scheme Managing Agency is to have flexibility to expand the range of refund options supported by robust information (e.g., consumer surveys) and in consultation with the scheme Governance Board and the Government department responsible with scheme oversight. The Managing Agency to also determine whether container return facilities are to provide all or several options to the consumer.</p>	<p>The benefit of providing New Zealanders with a range of options to receive the NZ CRS deposit refund ensures the scheme is fair to all and provides consumers with choice depending on current situations (e.g., job status, involvement in charities).</p>
	<p>Setting of an appropriate handling fee including reviews of the handling fee at intervals to be determined by the Managing Agency.</p>	<p>The reason why this is beneficial for Aotearoa New Zealand is primarily for the Managing Agency to compensate those scheme participants responsible for handling and sorting eligible containers and ensure that their respective</p>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
		activities remain profitable to ensure service continuation.
	<p>The Managing Agency may approve baling of scheme material (e.g., plastic, aluminium) at some container return facilities where it is demonstrated that these facilities would contribute to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. To achieve this, the Managing Agency will establish a scheme baling and audit process based on robust standards and procedures, including, for example, a contractual ‘Baling Services Agreement’ between the Managing Agency and the container return facility. This agreement will be supported by robust standards and procedures such as Standard Operating Procedures that the container return facility must contractually abide by. Additionally, the baling process will be standardised across the scheme so that the same baling process (i.e., weight and size of bale) is used at the container return facility and the scheme MCF ensuring consistency of methodology and minimisation of fraud;</p>	<p>The benefit presented by baling at container return facilities is the ability for the Managing Agency to use existing infrastructure whilst contractually managing the expansion of the facility’s role and responsibility. Additionally, this approach will support the establishment of regional/remote New Zealand collection facilities to also bale and transport material to end-markets under contract with the Managing Agency, thereby improving scheme efficiencies such as transportation of loose material (i.e., payload efficiencies). Further, the Managing Agency is best placed to establish and manage the ‘Baling Services Agreement’ and the supporting Standard Operating Procedures in order to track scheme material and minimise fraud.</p>
	<p>The Managing Agency may also approve compaction of scheme material (e.g., plastic, aluminium) at some container return facilities where it is demonstrated that these facilities would contribute to improved scheme efficiencies such as transport savings without compromising increased risk of fraud. To achieve this, the Managing Agency will determine the optimised compaction ratio that enables the scheme MCF to re-count and verify eligible scheme containers.</p>	<p>The benefit of this approach is the ability of regional/remote Aotearoa New Zealand collection facilities to reduce costs associated with transporting materials to the scheme MCF. Further, the Managing Agency is best placed to manage setting compaction ratios in order to track eligible containers and minimise fraud.</p>
	<p>The Managing Agency to give effect to the utilisation of</p>	<p>The benefit of this approach to Aotearoa New Zealand is to support New</p>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	appropriate transportation logistics providers and/or back-haul arrangements, including for remote/regional areas.	Zealand’s goal to reduce greenhouse gas emissions and progress New Zealand’s obligations under the Kyoto Protocol. The added benefit is to utilise existing infrastructure to support scheme activities whilst encouraging scheme employment.
	The Managing Agency to implement appropriate anti-fraud measures including, for example, contractual obligations, auditing and verification and reporting to closely monitor and assess performance of the logistics companies involved in the scheme. Additionally, there is also a role for the scheme regulator (i.e., central government agency responsible for the NZ CRS) and/or police in legally enforcing the breaches of the law and regulations where relevant.	The benefit of this approach is primarily driven by the Managing Agency to track registered scheme containers and to minimise scheme fraud and maximise scheme compliance (e.g., integrated IT and financial systems to track eligible and financial transactions).
	Revenue generated by the sale of eligible scheme material to be passed on via the Advanced Material Recycling Fee to beverage producers to reflect the choice of container materials used.	The reason why this is good for Aotearoa New Zealand is that the Managing Agency is in the best position to manage the risk and promote the beneficial use of material over the long term. This is beneficial for the New Zealand environment as it will encourage the reuse of scheme materials to New Zealand based material re-processors.
	Application of an Advanced Material Recycling Fee (AMRF) recognises that not all container packaging materials are equal with some more recyclable and valuable than others. In practice this means that materials that are difficult to recycle or problematic such as liquid paperboard may need to incur additional cost to see them successfully recycled in keeping with the outcomes of the NZ CRS design while other materials may receive a net income such as aluminium.	The reason why this is beneficial for Aotearoa New Zealand is that this in an open and transparent way to ensure container material choices by beverage producers are recognised and reflect any net cost or revenue that is expected to ultimately be passed on to the customer. Also, in keeping with the outcomes of the NZ CRS design, the non-financial impacts associated with container material choice must be factored in or at the very least provided for to help shape the direction and choice of container material in the future.
	The Managing Agency to give effect to fraud mitigation	The benefit of this approach is primarily driven by the Managing Agency to

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	measures such as a specific scheme logo applied in a way so as to minimise fraud.	track registered scheme containers and to minimise scheme fraud.
	The Managing Agency to integrate a separate financial accounting system and Information and Communications Technology (ICT) platform to manage scheme costs.	The benefit of this approach for a NZ CRS is to enable the Managing Agency to have complete transparency and visibility as they relate to the successful functioning and performance of the scheme.
	The Managing Agency to give effect to reporting of key scheme performance data.	The benefit of this requirement to Aotearoa New Zealand is to ensure the Managing Agency provides clear and transparent information on the efficiency and performance of the scheme whilst highlighting areas of improvement.
	The Managing Agency to support the establishment of a revenue sharing arrangements (deposit or handling fee amount, including a transitional period) underpinned by clear guidelines (e.g., the default position could have the deposit shared 50/50 between the MRF and the Territorial Local Authority making sure no party is disadvantaged nor gains a windfall from the NZ CRS with any surplus returned to the ratepayer) between the local council and the MRF for eligible containers collected via kerbside recycling collections. It is recommended each Territorial Local Authority and MRF operator undertake their own negotiations (excluding the involvement of the Managing Agency) and reach agreement on revenue sharing as this recognises the different contractual arrangements that exist across Aotearoa New Zealand. It is recommended that local authorities use the opportunity of recognising revenue from containers in the recycling bin to offset recycling collection costs incurred by ratepayers. The reason for this is to incentivise the MRF operator to make all appropriate efforts to separate out eligible and redeem containers (in accordance with	<p>The benefit to Aotearoa New Zealand is to ensure that scheme funds generated from council kerbside recycling collections is appropriately shared with the MRF in recognition of the respective contractual commitments and to incentivise continual operational improvements related to the collection and sorting of eligible scheme containers.</p> <p>It is recommended that further detailed analysis is undertaken to determine if the revenue sharing is based on the deposit value or the handling fee, but not both. The detailed analysis would be undertaken to reflect the different collection types, MRF operations, capital investments and scale of these and financial viability across Aotearoa New Zealand to ensure the revenue sharing is fair and reasonable and does not result in unintended consequences or perverse outcomes for the NZ CRS.</p> <p>The default position would be sharing of the deposit value.</p>



	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	<p>the scheme container acceptance criteria). Notwithstanding any contractual requirements between MRF operators and local councils it is recommended that a revenue sharing arrangement be established between the local council and the MRF. The revenue sharing arrangement is to be established and set at a level that will support kerbside recycling and incentivise the MRF to fund processing and maximise recovery of eligible containers.</p>	
<p><b>Section 12</b> <b>Extended Producer Responsibility and Kaitiakitanga Whakanaonga - Product Stewardship</b></p>	<p>A single independent not-for-profit Managing Agency is to be established to manage the operations and performance of the NZ CRS.</p>	<p>The benefit of this approach is the ability for one entity to take responsibility for the operations and performance of the NZ CRS coupled with providing clarity of roles and responsibilities to all scheme participants.</p>
	<p>The specific container return scheme legislative instruments to set a minimum 85% eligible scheme container return rate target and an aspirational eligible scheme container return rate target of 95% (including the establishment of drivers to achieve an aspirational target) against which the Managing Agency scheme performance will be held accountable.</p>	<p>Establishing targets for a minimum and an aspirational eligible container return rate means the scheme Managing Agency has set targets against which performance of the scheme can be measured and against which both Management (specifically the Managing Agency Chief Executive Officer) and Governance can be held to account.</p>
	<p>The Managing Agency to establish a risk and compliance monitoring programme.</p>	<p>The benefit of this approach is to ensure all scheme participants abide by the specific regulation requirements and any other operational and/or performance standards and/or requirements as established by the Managing Agency. Establishment of a risk and compliance monitoring programme will assist the Managing Agency to identify any operational and/or performance issues which may arise and implement remedial measures as required.</p>
	<p>The Managing Agency to establish and implement a transparent financial management system and Information and Communications Technology (ICT)</p>	<p>The provision of a transparent financial accounting system which will benefit the NZ CRS by ensuring scheme finances are protected and managed so as to provide security of information. Managing free-riding will benefit</p>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	platform including the management of any free-riding.	Aotearoa New Zealand by requiring all eligible scheme containers and persons/organisations selling these containers to be registered thereby ensuring all sellers of eligible scheme containers are treated equally and comply with the NZ CRS requirements.
	The Managing Agency to provide clear and transparent reporting of scheme costs to consumers at the point of sale (e.g., visibility of all scheme costs on customer receipt and/or on the scheme website)	The benefit of this approach is ensuring consumers have complete transparency of the costs of products, the current deposit rate and the current scheme charges, i.e., the cost of recycling the purchased products. The additional benefit of this approach is the ability for the NZ CRS to facilitate greater public awareness of the kaupapa - principles of Extended Producer Responsibility and by extension greater engagement in environmental stewardship.
	<p>The Managing Agency promote and encourage the development of the refillables market through options including, but not be limited to:</p> <ol style="list-style-type: none"> <li>1. Funding and promoting the benefit and awareness of refillables as a preferred choice to New Zealanders.</li> <li>2. Working closely with existing and future New Zealand refillable schemes to identify and remove barriers to their growth, irrespective of whether existing or future refillable schemes choose to be included within a NZ CRS or not. This approach recognises and provides for individual companies to manage and promote their own unique refillable containers and where companies may wish to share a universal bottle.</li> <li>3. Further to bullet 2, investment in or funding of, infrastructure to remove barriers such as the costs associated with the return, re-washing and refilling of bottles.</li> </ol>	<p>This is in alignment with the three (3) key project outcomes as discussed in Section 1 and noted below:</p> <ol style="list-style-type: none"> <li>1. Change the way Aotearoa New Zealand values beverage containers that will see increased hangarua - recycling and new opportunities for refilling;</li> <li>2. Reduce the volume of plastics and other container litter currently ending up in our streams (i.e., awa – waterways), moana - marine environment, wāhi tūmatanui - public spaces and ruapara - landfills; and</li> <li>3. Give effect to ōhanga āmiomio - circular economy outcomes and any future priority product guidelines.</li> </ol>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	<ol style="list-style-type: none"> <li>4. Ensuring that the method of return by customers is convenient and accessible and where appropriate and practicable is compatible with existing NZ CRS container collection return facilities.</li> <li>5. Establishment of NZ CRS container return facilities that can accept, sort and store for transportation both eligible single-use beverage containers and reusable beverage containers.</li> <li>6. Support and facilitate the uptake of reusables through the integration of strategic directives embedded within the NZ CRS scheme performance indicators.</li> <li>7. Securing the funding to achieve the above from the scheme fee.</li> </ol>	
<p><b>Section 14</b></p> <p><b>Scheme Managing Agency Organisational Form</b></p>	<p>A key function of the Managing Agency will be to provide the day-to-day operational and performance management to ensure the scheme meets consumer and scheme participant expectations, as well as regulated requirements.</p> <p>The Managing Agency will be established as a single independent, government appointed Governance Board, not-for-profit organisation supported by clear regulatory conditions including consequences for not delivering on the minimum container return rate target of 85% and to strive towards the aspirational container return target of 95% (including the establishment of drivers and levers to achieve the aspirational target such as level of deposit). Consequences include, but are not limited to, the government:</p> <ul style="list-style-type: none"> <li>• Replacing one (1) or more of the scheme Governance Board members; and</li> <li>• Increasing the level of container deposit (e.g., an</li> </ul>	<p>The benefit of this approach is the ability for one entity to take responsibility for the operations and performance of the NZ CRS coupled with providing clarity of roles and responsibilities to all scheme participants. Establishing targets for a minimum and an aspirational eligible container return rate means the scheme Managing Agency and scheme Governance Board have set targets against which performance of the scheme can be measured and against which both management (specifically the Managing Agency Chief Executive Officer) and governance functions can be held to account.</p>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	increase of 10-cents).	
	<p>The independent not-for-profit Managing Agency organisation will comprise of an Executive Management Team comprising senior managers of the organisation, including but not limited to, the Chief Executive Officer, Financial Manager, Operating Manager, Marketing and Communications Manager, Audit and Risk Manager, Community and Social Enterprise Manager, Collection Facility Manager, Mana Whenua Relationship Manager (noting that relationships with Mana Whenua will be interconnected throughout the NZ CRS with the Managing Agency and scheme Governance Board accountable for achieving this);</p>	<p>The benefit of this approach is that the operation and performance of the NZ CRS is managed by a dedicated Executive Management Team comprising employees directly involved in the day-to-day operational performance of the scheme. The Executive Management Team representatives will be experienced (e.g. commercial acumen) in and have active working knowledge of all aspects of their respective operational areas, including areas for improvement, any risks and/or opportunities.</p>
	<p>The independent not-for-profit Managing Agency organisation will comprise an Operations Team responsible for fulfilling the day-to-day scheme activities comprising for example, Logistics Manager, Audit and Compliance Manager, Finance Manager, IT Manager, Communications Manager, Community Engagement Manager, Regional Coordinator Manager.</p>	<p>The benefit of this approach is that the day-to-day scheme activities are managed by a dedicated Operations Team comprising employees directly involved in fulfilling the duties of the scheme.</p>
	<p>The Managing Agency employees, including the Chief Executive Officer will be independent of any individual or organisation involved with the scheme Governance Board and must not own, be employed by or have any involvement in any organisation that is financially gaining from the NZ CRS. Any family, relatives, etc that are employed by the scheme Managing Agency and where such relationships exist must be fully disclosed and approved by the scheme Governance Board and not at the discretion of the Managing Agency Chief Executive</p>	<p>Establishment of independence between the Management and Governance functions of the Managing Agency will ensure avoidance of any undue influence by a vested interest and confidence that information available to the Managing Agency is held in confidence for the purposes of operating the NZ CRS only.</p>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	Officer to approve.	
	Full transparent tender processes with probity oversight to be in place for all Managing Agency procurement processes, for example, the access to the sale of recyclable scheme material.	Ensuring robust procurement and probity processes are in place will ensure the Managing Agency will undertake procurement activities in an open and fair environment to ensure all potential suppliers are given impartial and equitable treatment.
	Clear processes will be established to manage and protect all commercial information and/or data that is confidential and/or sensitive to competitors market activities.	Establishment of a clear process and or individual employee contracts specifically restricting the use of commercial and/or sensitive information and/or data will ensure scheme participants have confidence that commercially sensitive information will be used for scheme purposes only.
	The specific container return scheme legislative instruments to set a minimum 85% eligible scheme container return rate target and an aspirational eligible scheme container return rate target of 95% (including the establishment of drivers to achieve the aspirational target) against which the Managing Agency scheme performance will be held accountable.	Establishing targets for a minimum and an aspirational eligible container return rate means the scheme Managing Agency has set targets against which performance of the scheme can be measured and held to account.
	The specific container return scheme legislative instruments to set a minimum eligible container return rate of 85% target is applied to the NZ CRS with interim annual container return minimum targets of 60%-year 1, 65%-year 2, 70%-year 3, 80%-year 4, 85%-year 5 set for the first five (5) years of scheme operation.	The benefit of this approach is to acknowledge the build-up period from scheme start to when the scheme reaches the optimal eligible container return rate and enable the Managing Agency to engage with consumers through measures including, for example, targeted scheme consumer marketing and engagement campaigns
	Implementation of regulated scheme review periods comprising of two (2) initial scheme review periods to assess scheme performance and operation (e.g., eligible scheme container return rates, consumer accessibility)	The benefit of two (2) interim scheme review periods is to enable sufficient time for the scheme to build towards optimal performance and enable the Managing Agency to assess the schemes performance, including, for example, the interim annual container return rate targets and the

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	and strategic direction set at the end of the year-3 and year-5 financial periods, then every 5-years thereafter.	accessibility of a consumer focussed network of container return facilities.
	Scheme review trigger. The following will apply and align with the above interim annual container return targets - if the return rates does not reach 70% within 36-months, 80% within 48-months or 85% within 60-months, whichever occurs first.	<p>The deposit shall automatically be increased to NZD20-cents. This is on the basis that the Managing Agency has explored other improvements to scheme performance including but not limited to increasing scheme awareness and the number of collection sites (along with any increase to the container handling fee to ensure collection sites remain viable) to improve convenience.</p> <p>Notwithstanding the above, the recommended deposit fee of NZD10-cents shall be reviewed by the government regulatory authority (Manatū Mō Te Taiao - Ministry for the Environment) no later than 9-months prior to the scheme to confirm 10-cents as the correct starting deposit value.</p>
	Annual reviews of the Managing Agency will be undertaken by the respective central government department responsible for ‘owning’ the NZ CRS.	The benefit of this approach is to ensure the Managing Agency is held accountable for the performance and operation of the scheme with appropriate financial incentives, for example, to meet and where possible exceed set targets.
	Implement appropriate anti-fraud measures including, but not limited to, contractual obligations, auditing, verification and reporting to closely monitor and assess performance of participants involved in the scheme. Additionally, there is also a role for the scheme regulator (i.e., central government agency responsible for the NZ CRS) and/or police in legally enforcing the breaches of the law and regulations where appropriate.	The benefit of this approach is primarily driven by the Managing Agency’s ability to track registered scheme containers and participants to minimise scheme fraud and maximise scheme compliance (e.g., integrated IT and financial systems to track eligible and financial transactions).
	Fraud mitigation measures such as a maximum cap on the number of eligible scheme containers returned at any point in time by non-scheme registered individuals.	The benefit of this approach is to ensure that all scheme participants involved in the bulk collection of eligible scheme containers are registered within the scheme so that the scheme Managing Agency can manage, monitor and track collection activities and the numbers of containers being returned and deposits refunded through the scheme. Additionally, capping

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
		<p>the number of eligible containers returned at any point in time influences tax avoidance by non-scheme registered individuals. The cap will be set at 1,500 containers for a cash deposit refund in alignment with the New South Wales, Queensland and Northern Territory container return schemes in Australia and subject to any specific Aotearoa New Zealand tax laws and scheme measures such as fraud mitigation and reporting requirements. Additionally, the option to include additional container cap numbers for specific container return facilities, for example, retail, will be considered during the NZ CRS implementation stage.</p>
	<p>The maximum container return amount will have to be considered across the three envisaged return point scenarios (Manual Depot, Automated Depot and Return to Retail) with an emphasis on striking a balance between container return efficiency and impact on existing business activities, particularly when considering return to retail points. It may be the case that return to retail points will require site by site consideration to ensure that retail activities are not unduly disrupted by container return activities particularly when the return point is inside the retail operation, for example, inside a supermarket.</p>	<p>The benefit of this approach to the NZ CRS is ensuring that container return facilities are not unduly disrupted by container return activities.</p>
	<p>Risk and compliance measures, including but not limited to, auditing of scheme participants and adopting best practice methodology carried out in a way so as to minimise fraud.</p>	<p>The benefit of this approach is primarily driven by the Managing Agency to monitor scheme participant compliance with scheme requirements to minimise scheme fraud.</p>
	<p>Revenue generated by the sale of eligible scheme material to be passed on via the Advanced Material Recycling Fee to beverage producers to reflect the choice of container materials used.</p>	<p>The benefit of this approach is that the Managing Agency is in the best position to manage the risk and promote the beneficial use of material over the long term. This is beneficial for the New Zealand environment as it will encourage the reuse of scheme materials with a priority focus on New</p>

	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
		Zealand based manufacturers.
	Reporting of key scheme performance data including but not limited to monthly rolling average data of scheme performance (e.g., operational, fiscal, health and safety, customer satisfaction) and container return rate targets, or other reporting time period to align with, for example, contractual key performance indicator measures.	The benefit of this approach is to ensure the Managing Agency provides clear and transparent information on the efficiency and performance of the scheme whilst highlighting areas of improvement.
	A range of options for consumers to receive the deposit refund is provided for (e.g., manual container return facilities, RVMs) in the design of a NZ CRS, including cash, supermarket voucher (including, for example, a 2-year expiration date), donation, electronic funds transfer, other (e.g., scheme credit system, loyalty card, gift card). The scheme Managing Agency is to have flexibility to expand the range of refund options supported by robust information (e.g., consumer surveys) and in consultation with the scheme Governance Board and the Government department responsible with scheme oversight. The Managing Agency to also determine whether container return facilities are to provide all or several options to the consumer.	The benefit of providing New Zealanders with a range of options to receive the NZ CRS deposit refund ensures the scheme is fair to all and provides consumers with choice depending on current situations (e.g., employment status, involvement in charities).
	The Managing Agency will be responsible for the incorporation of social and indigenous procurement elements (e.g., establishment of employment number targets for manual collection depots) in all relevant scheme related contractual requirements.	The benefit of this approach is that the Managing Agency can set social targets to support, for example, indigenous employment opportunities.
	The Managing Agency will be responsible for the establishment and ongoing implementation of a NZ CRS scheme education (e.g., school and employment	The establishment of a scheme specific education and employment programme will support the NZ CRS to provide the New Zealand community with a programme that provides New Zealander’s with more than simply a



	Managing Agency Requirements	Benefits of a New Zealand Container Return Scheme
	programme which may include NZ CRS waste and resource management curriculum), for example, life skill (e.g., budgeting skills) opportunities.	container recycling and instead with a scheme that encourages and promotes the social good of New Zealand communities. Additionally, in a post-COVID-19 economy the ability to provide New Zealand communities and individuals with opportunities to diversify skills and provide a mechanism to develop new and/or additional life skills will be an important element in supporting Aotearoa New Zealand’s economy.
	The roles and responsibilities, including Managing Agency review periods will be set in the specific container return scheme legislative instruments.	Setting the roles and responsibilities of the Managing Agency in the New Zealand Container Return Scheme legislative instruments will provide transparency and accountability to the Managing Agency. Ultimately, the Managing Agency is responsible for the operational and performance success of the NZ CRS and so their specific roles and responsibilities need to be clearly established within the legislative instruments.
	The Managing Agency to ensure all scheme participants (including the general public) comply with relevant legislation, for example, health and safety.	The benefit of this approach is to ensure all scheme participants are aware of and meet their obligations as per relevant legislation. Further, the Managing Agency is to ensure that all scheme participants (e.g., container return facilities) have established approved health and safety plans to ensure the safety of all persons engaged in the NZ CRS (including the general public accessing and engaging with container return facilities).
<b>Section 16 Reporting</b>	Notwithstanding the contractual arrangements between the scheme Managing Agency and container return facilities, Material Consolidation Facilities and Material Recovery Facilities, legislative instruments will be required to ensure that the Managing Agency is able to access these sites and able to obtain information required to measure and manage the performance of the scheme.	The benefit of this approach is primarily driven by the Managing Agency to monitor scheme participant compliance with scheme requirements to minimise scheme fraud and ensure compliance with scheme requirements and expectations.
	Acknowledging the potential make-up of the Managing Agency, clear processes will be established to manage any	Establishment of a clear process and or individual employee contracts specifically restricting the use of commercial and/or sensitive information

	<b>Managing Agency Requirements</b>	<b>Benefits of a New Zealand Container Return Scheme</b>
	commercial information and/or data that is confidential and/or sensitive to competitors market activities.	and/or data will ensure scheme participants have confidence that commercially sensitive information will be used for scheme purposes only.

## Appendix E **Te Tai Ōhanga – The Treasury: Guide to Cabinet’s Impact Analysis Requirements**

Refer to attached pdf: The New Zealand Container Return Scheme Design Appendices.

## Appendix F **New Zealand Container Return Scheme financial model report**

Refer to attached pdf: The New Zealand Container Return Scheme Design Appendices.

## Appendix G **Key Results from the ConsumerNZ survey**

Refer to attached pdf: The New Zealand Container Return Scheme Design Appendices.

Appendix H The New Zealand Container Return Scheme Managing Agency Governance Board option scenarios

	<b>Option 1: Central Government</b>	<b>Option 2: Local Government</b>	<b>Option 3: Industry</b>	<b>Option 4: Central Government and Local Government</b>	<b>Option 5: Central Government and Industry</b>	<b>Option 6: Local Government and Industry</b>	<b>Option 7: Central Government, Local Government and Industry</b>
<b>Overview</b>	All Governance Board members are appointed by New Zealand Government (presumably the Associate Minister for the Environment, as the Minister overseeing the scheme design).	All Governance Board members appointed by local government.	All Governance Board members appointed by industry (including a combination of manufacturers, beverage suppliers, retailers and recycling industries).	Combination of options 1 and 2.	Combination of options 1 and 3.	Combination of options 2 and 3.	Combination of options 1, 2 and 3.
<b>Examples</b>	<b>State Owned Enterprises and Crown Entities</b> Members appointed by Shareholding Ministers	<b>Watercare Services Limited</b> 6-8 members appointed by Watercare’s shareholder, Auckland Council.	<b>Dansk Retursystem</b> 13 members representing Danish breweries and grocers.	<b>Tamaki Regeneration Company</b> 5-7 directors; 1 Crown appointment, 1 council appointment and the remaining appointed by ordinary resolution.  <b>Local</b>	<b>Western Australia Return Recycle Renew Limited</b> 9 members; 4 beverage industry (member) appointments (one of which must represent small beverage producers); 5 independent approved by state government (including an independent	<b>The Agrecovery Foundation</b> 7 members; 6 industry appointments (5 for the primary sector and 1 for distributors of agrichemicals) and 1 local government appointment.	-

	Option 1: Central Government	Option 2: Local Government	Option 3: Industry	Option 4: Central Government and Local Government	Option 5: Central Government and Industry	Option 6: Local Government and Industry	Option 7: Central Government, Local Government and Industry
				<p><b>Government Funding Agency (LGFA)</b> 4-7 members appointed by the Shareholders Council (comprising 1 central government appointee and the remainder local government).</p>	<p>chair).approved by state government (including an independent chair).</p> <p><b>COEX</b> (Organisation overseeing QLD CRS) 9 members; 5 beverage industry (member) appointments (one of which must represent small beverage producers); 4 independent approved by state government (including an independent chair).</p>		
Is the option likely to promote social, economic, and environmental objectives, underpinned by a cultural framework?	<p><b>Social</b> Commercial <b>Environmental</b> Cultural</p>	<p><b>Social</b> Commercial <b>Environmental</b> Cultural</p>	<p>Social <b>Commercial</b> Environmental Cultural</p>	<p><b>Social</b> Commercial <b>Environmental</b> Cultural</p>	<p><b>Social</b> <b>Commercial</b> <b>Environmental</b> Cultural</p>	<p><b>Social</b> <b>Commercial</b> <b>Environmental</b> Cultural</p>	<p><b>Social</b> <b>Commercial</b> <b>Environmental</b> Cultural</p>

	<b>Option 1: Central Government</b>	<b>Option 2: Local Government</b>	<b>Option 3: Industry</b>	<b>Option 4: Central Government and Local Government</b>	<b>Option 5: Central Government and Industry</b>	<b>Option 6: Local Government and Industry</b>	<b>Option 7: Central Government, Local Government and Industry</b>
<b>Advantages and disadvantages</b>	<ul style="list-style-type: none"> <li>✓ Represents the people of New Zealand</li> <li>✓ Accustomed to balancing environmental, social, cultural and commercial outcomes.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Represents the people of New Zealand</li> <li>✓ Accustomed to balancing environmental, social, cultural and commercial outcomes.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Strong sector technical knowledge and capability (although this expertise can be appointed to the Governance Board).</li> </ul>	See commentary regarding options 1 and 2.	See commentary regarding options 1 and 3.	See commentary regarding options 2 and 3.	See commentary regarding options 1, 2 and 3.
<b>Advantages and disadvantages</b>	<ul style="list-style-type: none"> <li>✓ Helpful for regulator to have first hand exposure to system (although there are other mechanisms for achieving this).</li> <li>• Not directly involved in the production or disposal of beverage containers.</li> <li>• Potential conflict of interest in the event that Board appointments are made by the same part of Government regulating the</li> </ul>	<ul style="list-style-type: none"> <li>✓ Extensive involvement with the system through collection and processing of kerbside refuse and recycling and landfill disposal (although this expertise can be appointed to the Board).</li> <li>• May enable provision of funding through the LGFA (requires further investigation).</li> <li>• Potential conflict of interest due to benefit to council</li> </ul>	<ul style="list-style-type: none"> <li>✓ May enable provision of funding through industry parties (e.g. as is the case with some Australian schemes).</li> <li>• Potential conflict of interest due to scheme costs and operation affecting industry.</li> <li>• Evidence from schemes overseas suggests industry governed schemes tend to focus on commercial outcomes, with less emphasis on environmental and social outcomes.</li> </ul>	See commentary regarding options 1 and 2.	See commentary regarding options 1 and 3.	See commentary regarding options 2 and 3.	See commentary regarding options 1, 2 and 3.



	<b>Option 1: Central Government</b>	<b>Option 2: Local Government</b>	<b>Option 3: Industry</b>	<b>Option 4: Central Government and Local Government</b>	<b>Option 5: Central Government and Industry</b>	<b>Option 6: Local Government and Industry</b>	<b>Option 7: Central Government, Local Government and Industry</b>
	scheme (i.e. MfE).	of deposit revenue from kerbside collection. <ul style="list-style-type: none"> <li>• Not involved in the production of containers.</li> </ul>					
<b>Provisional comments on the preferred options</b>	<b>Pending</b> – Central government is tasked with regulatory oversight of the system, a potential conflict of interest that would need to be managed..	<b>Pending</b> – Partial or full local government ownership has close involvement in system (see assessment under option 1) and possibility of accessing funding through the LGFA, however there is a potential conflict of interest for unredeemed containers in kerbside collections.	<b>Pending</b> – Full industry ownership not preferred due to experience with schemes internationally, where commercial objectives outweigh other objectives and due to potential conflict of interest particularly if redemption/ refund model.	<b>Pending</b> – see commentary regarding options 1 and 2.	<b>Pending</b> – Central government and industry involvement is an option. It is noted that central government does not have as close as involvement in waste recovery as local government.	<b>Pending</b> – Partial involvement of local government and industry is an option as it offers strong sector knowledge and experience and ability to balance environmental, social, cultural and commercial objectives.	<b>Pending</b> – Central government, local government and industry involvement is an option as it offers strong sector knowledge and experience and ability to balance environmental, social, cultural and commercial objectives.

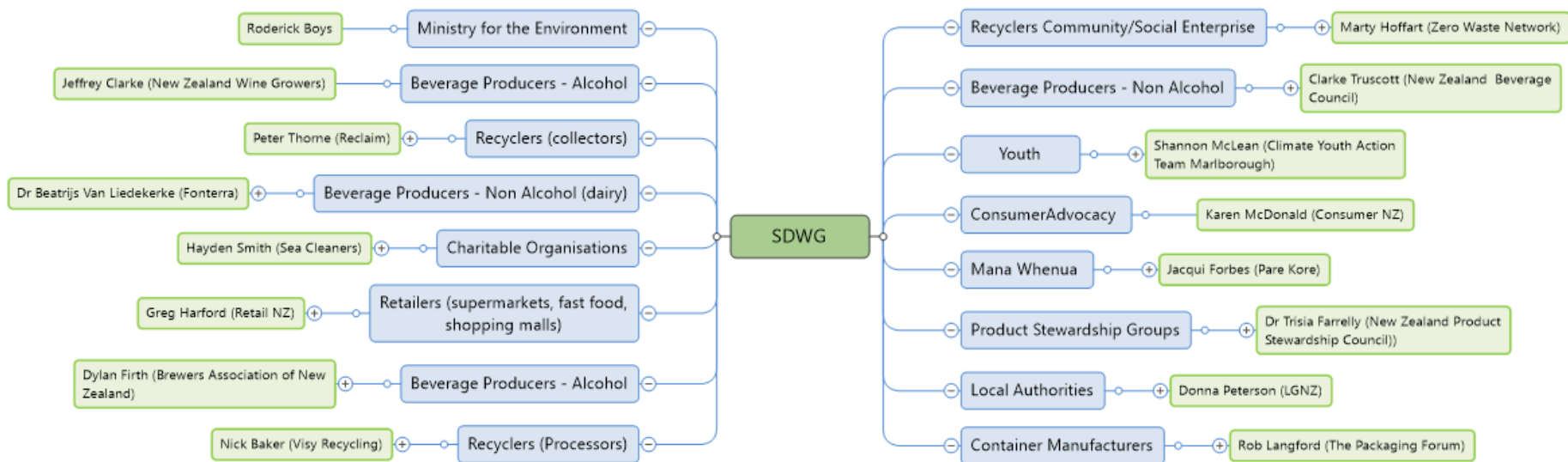
## Appendix I **Assumptions for deriving single-use container volumes and weights**

Refer to attached pdf: The New Zealand Container Return Scheme Design Appendices.

## Appendix J **New Zealand Container Return Scheme Cost-Benefit Analysis report**

Refer to attached pdf: The New Zealand Container Return Scheme Design Appendices.

## Appendix K Stakeholder Map



*Whatungarongaro te tangata,  
toitū te whenua*

*As people disappear from sight,  
the land remains*

