Updated Interim Regulatory Impact Statement: A beverage container return scheme for Aotearoa New Zealand

Coversheet

Purpose of Document	
Decision sought:	To draft legislation to implement a container return scheme for Aotearoa New Zealand
Advising agencies:	Ministry for the Environment
Proposing Ministers:	Minister for the Environment
Date finalised:	Reissued 9 December 2022

Problem Definition

Compared to other jurisdictions, New Zealand's beverage container recovery rates are low. This results in high rates of beverage container litter, environmental harm, a burden for councils, and lost opportunity for recycling/resource recovery.

Our current waste collection practices and recycling systems do not enable nor incentivise people to appropriately dispose of (or recycle) their beverage containers, particularly when away from home. The costs of resource recovery of beverage containers are largely borne by councils and ratepayers.

Executive Summary

Context and Objectives

Why government intervention is required

Compared to other jurisdictions, New Zealand's beverage container recovery rates are low and litter rates high. In 2020/21, New Zealanders consumed an estimated over 2.57 billion beverages sold in single-use containers made from plastic, aluminium, glass and liquid paperboard. Only an estimated 45% of these containers were recovered for recycling by weight.

The externalities of single-use beverage containers are not borne by those who benefit from the sale and consumption of single-use beverages (eg, beverage producers, retailers and consumers). Currently, few incentives exist for producers to take responsibility for the containers sold, or to improve the recyclability of their containers.

Our predominant resource recovery systems (ie, kerbside recycling) are not designed to capture away-from-home consumption (including beverages consumed on the go or in commercial premises). There is limited incentive for individuals or businesses to take steps to ensure containers are recycled or disposed of correctly.

Low recovery and high litter rates for beverage containers result in:

- environmental and social harm: beverage containers are consistently the most commonly littered items in Aotearoa New Zealand. Litter pollutes our environment and has impacts on habitats, wildlife and communities

- unfair burden for councils: councils are required to fund the costs of managing litter, waste recovery systems and recycling for beverage containers, produced and sold by businesses, creating an unfair burden on councils and ratepayers
- lost opportunities for resource recovery: large numbers of beverage containers made of plastic, glass and aluminium end up in landfills. The failure to recycle these valuable materials represents a lost opportunity and contributes to both additional resource extraction and carbon emissions.

Objectives

The Ministry has identified three overarching policy objectives for improving outcomes associated with beverage containers. These are to:

- *increase circularity of beverage containers:* through a high performing scheme resulting in, reduced litter, improved recycling and circular outcomes and reduced emissions.
- *enable a producer responsibility model:* shifting the costs of resource recovery and waste minimisation from ratepayers and councils to the producers, retailers and consumers of beverages.
- *produce community benefits for New Zealand*: by growing our circular economy, providing for community participation including fundraising opportunities, and providing for accessible and convenient beverage container return points, making it easy for consumers and businesses to do the right thing.

Preferred option and consultation feedback

Following Ministerial consideration of a range of options (as detailed in section 2) and consideration of key design elements, Cabinet agreed to consult on a proposal for the implementation of a container return scheme for New Zealand (NZ CRS). A CRS is a recycling scheme and form of product stewardship that involves the use of a refundable deposit to incentivise consumers and businesses to return beverage containers for recycling. Key design elements proposed for consultation were:

Refundable deposit level	Deposit level of 20 cents, plus GST
Container return network type	Mixed return model using regulated takeback (return-to-retail) requirements for some retailers while enabling voluntary participation by other retailers and some depot operators
Financial model	Deposit financial model: beverage producers pay a deposit and scheme fees on all eligible containers sold to market, regardless of whether the containers are returned through the CRS
Types of containers in scope	Broad scope of eligible beverage containers with exemptions for fresh white milk in all packaging types; beverage containers that are intended for refilling and an exemption for beverage containers over 3 litres
Scheme governance	Not-for-profit, industry-led scheme with central government regulatory oversight
Recovery targets	A target of 85% beverage container recovery by year 3 of scheme implementation, and 90% recovery achieved by year 5, proposing to review and possibly increase the deposit level and network regulatory settings if targets are not met
Scheme fees	Eco-modulation of scheme fees

Consultation feedback

Proposals for a NZ CRS were publicly consulted on as part of the Transforming Recycling consultation, which was open for feedback from 13 March to 22 May 2022.

Consultation feedback indicated wide support (92%) to implement a NZ CRS. Most submitters supported the scheme design elements including the deposit, deposit financial model, and scope of containers. Some stakeholders raised issues, as follows:

- many submitters (61%) opposed the exemption of fresh milk
- large alcohol/glass industry stakeholders opposed the inclusion of glass
- larger beverage producers, retailers and some businesses/industry bodies raised concerns about the scheme costs (including the 20 cent deposit level), take-back requirements for retailers and GST treatment
- some NGOs and local government submitters, as well as the Kiwi Bottle Drive pro forma submissions, raised concerns about the industry-led governance structure.

Proposal for a NZ CRS

Following analysis of submission feedback and updated financial modelling and cost benefit analysis (including additional analysis on the application of the Goods and Services Tax (GST) Act, the Ministry's preferred option is to implement a NZ CRS as proposed with key changes following consultation being:

- the introduction of a lower size limit of 100mL for containers to be included within a NZ CRS, on the basis of industry feedback about the costs and practicalities of processing very small beverage containers
- to review the exemption for fresh milk and refillables at the completion of the scheme's third year, reflecting feedback that these container types should be included within the scheme to improve overall outcomes and consistency
- a change in the GST treatment of the deposit level to be inclusive of GST (rather than exclusive as previously proposed), changed based on additional analysis by officials about the application of the GST Act
- that a minimum deposit level of 10 cents be set in legislation to ensure that a cash payment can be made (noting that the lowest legal tender amount for a cash refund in New Zealand is 10 cents)
- that the actual deposit level to be set in regulation prior to implementation of the scheme, which is expected to be in 2026
- that the detailed return network parameters, setting out the extent of mandated retail takeback will be set in regulation, subject to a further analysis.

Full details are set out at Table 13 in Section 3. The Ministry has assessed the NZ CRS as proposed above as the most likely to:

- address the root causes of the beverage container recovery and litter problem, with the refundable deposit being a key incentive to improve waste practices across the value chain
- shift costs away from councils, ratepayers and the environment, and, instead, towards responsible parts of the supply chain (ie, beverage manufacturers, retailers and the consumers of beverages)
- limit costs to businesses, retailers and consumers
- align strategically with the proposed waste strategy and complement other waste initiatives (particularly proposed changes to kerbside recycling)

- be achievable in the medium term.

Ministry views on deposit level and extent of retail takeback

Although it is proposed that the deposit level will be determined via regulation (as per the implementation details below), the Ministry's preference is for a 20 cent deposit level (inclusive of GST), on the basis that, in combination with other factors, it strikes the best balance between incentivising container return, and management of scheme costs.

Although it is proposed that the extent of the mandatory retail takeback will be set in regulation, the Ministry's view, subject to further analysis, is that to ensure an accessible and convenient return network, it is likely that mandated takeback would:

- apply to larger retailers or supermarkets (such as those exceeding a specific floor area, which could differ for urban and rural communities)
- exclude small retail stores such as convenience stores and dairies unless they wish to participate and are responding to a procurement process seeking return point operators in that geographic area
- provide conditions and/or the ability to exempt retailers, such as for health and safety, or food safety reasons; or where there is another container return point in close proximity, eg, within a set distance.

Benefits and costs[1]

Key benefits of implementing the option as recommended by the Ministry are:

- a deposit, subject to regulation, set at a level that provides a sufficient incentive for consumers to return their containers, yet manage costs
- a network design that, subject to regulated parameters, enables easy and convenient return for consumers
- a scheme financial model that enables scheme fees and kerbside costs to be offset by unclaimed deposits
- a scheme that is industry led, but well regulated
- a self-funding model that shifts the costs away from councils and the community
- broad material type coverage to capture the bulk of beverage containers and maintain an even playing field across industry participants
- exemptions (fresh milk, refillables, large and very small beverage containers) that reflect a balance between managing household costs and pragmatic choices to reduce complexity
- support for a stronger culture of valuing materials, to keep them in circulation for as long as possible
- benefits to local government include direct financial benefits estimated at $50 million in year one (or ~$27 per household) through reduced kerbside collection, landfill and litter costs, and increased value beverage containers remaining in kerbside.

Based on the design set out above, key costs are:

- The average household net cost for participating in the scheme is now estimated at $1.08 per week or $56 in year one (2025/26). Households may choose to offset

1 All benefits and costs figures in this section are based on a 20 cent (GST inclusive) deposit scenario.

some or all of these additional costs by changing their consumption behaviour, for example, by buying slightly fewer multipacks per year.

- a drop in container sales volume (in particular, large multipacks) may be experienced. The PricewaterhouseCoopers (PwC) modelling for a NZ CRS assumes a one-off 6.5% reduction in container sales volume with a sensitivity range of 0 - 14.7%.
- opportunity costs related to the provision of take-back facilities including reverse vending machines at supermarket/retail sites – noting that supermarkets and any other container return facility types are remunerated for reasonable costs via a 'handling fee' per container returned.
- labelling change costs – estimated as a one-off $10 million.

Note, the overall benefit-cost ratio (BCR) is estimated at 1.47 (with a range of 0.63 to 2.08). The latest version of the CBA has been through internal review and an additional independent peer review process, which was delayed due to unforeseen illness (COVID-19). Any material changes as a result of independent review are incorporated in this reissued document, and include a minor change in the BCR from 1.48 to 1.47 (range changed from 0.66 – 2.19 to 0.63 – 2.08). Feedback and improvements from all previous reviews are included in the CBA attached to this paper. The Sapere NZ CRS CBA is relatively conservative and we note that international schemes have been established based on less conservative assumptions.

Implementation proposals

Legislation is required

The Ministry's preferred option is that the NZ CRS be industry led. However, experience in other jurisdictions is that industry is strongly incentivised to prioritise commercial over environmental and social good outcomes and subsequently drive down cost at the expense of attaining the outcomes sought from the scheme. Consequently, we do not consider a voluntary NZ CRS is appropriate and recommend that legislation be drafted to implement a NZ CRS. Due to the technical nature of the scheme, new and cohesive legislation is needed, which will be progressed as part of the wider review of the Waste Minimisation Act 2008.

Hierarchy of powers

It is proposed that the NZ CRS will be enabled through a hierarchy of powers, obligations, roles and functions. Primary legislation will set out the broad framework for the scheme, and the functions, powers and obligations of the Minister, the Ministry for the Environment, the Product Stewardship Organisation (PSO)[2] and other scheme participants.

Regulations will address substantial decisions relating to the scope of the NZ CRS (including, for example, the refundable deposit amount, the types of containers to be included, excluded or exempt from the scheme and the return network parameters). Certain technical and administrative matters relating to scheme design and operations, data and reporting, and if needed, the input methodology for calculation of the scheme fee may be determined by the Secretary for the Environment.

Checks and balances

Reflecting consultation feedback raising concerns about the incentives on industry to impact the performance of the scheme, it is proposed that the Minister for the Environment may

2 The not-for-profit, industry-led organisation that will be appointed to coordinate the scheme

utilise a range of powers if expected performance is not achieved. These include powers to review the scheme, appoint a Crown Manager or, as a last resort, dissolve the PSO Board and take over the assets and liabilities of the scheme.

Legislative framework for categorisation of beverage containers to manage free rider and other risks

To ensure clarity about which beverage containers are impacted by the scheme, the legislation will provide a framework for categorising containers that are out of scope, in scope, and for those products in scope, approved to be in the scheme, exempt from the scheme, or excluded from the scheme.

To ensure visibility of the broader beverage container market, it is proposed that all beverage container[3] producers and importers (as defined to be in scope of the scheme) are required to register via a portal, to be operated by the Ministry for the Environment or its authorised third party.

To discourage producers from transitioning to unsuitable beverage container materials and packaging, excluded containers[4] will be prohibited from sale, unless a temporary exemption from the prohibition is approved (to enable transition arrangements, or in emergency or unforeseen circumstances outside of normal scheme operations).

This proposal is consistent with current legislation applying to regulated product stewardship schemes, which will only allow products to be sold in accordance with a scheme. Regulations will set out processes to ensure that producers are provided with appropriate guidance, and time to transition to more recyclable materials. Temporary exemptions to prohibition of sale can be used to manage emergency or unusual events, or where there may be significant costs or impacts on producers and/or importers of beverages that need working through.

Additional analysis to be provided in a subsequent, final RIS

A final RIS will be provided alongside advice to Cabinet (in the first quarter of 2023) on outstanding implementation matters that are not covered in this Interim Updated RIS. This includes detail on compliance, monitoring and enforcement, governance of the PSO and other technical matters. A cost recovery impact statement (CRIS) and details of how the NZ CRS will be evaluated and reviewed will also be included in the final RIS.

Limitations and Constraints on Analysis

Quality of data and evidence used in developing this proposal

Officials have undertaken and commissioned data analysis, and considered a range of evidence, including industry data, modelling carried out by PricewaterhouseCoopers, an independent CBA (see Appendix 2), sales data from GS1 New Zealand Incorporated, international CBA data (Reloop, 2021), geospatial data on New Zealand supermarkets, resource recovery data from Councils and recovery facilities.

[3] *Beverage container* refers to a vessel or casing of a 'beverage' (regardless of whether it is sold individually or as a unit in a multipack) that is sealed and in an airtight and watertight state at the point of sale.

[4] Excluded containers are those not eligible for participation in the CRS and not exempt (eg, milk, refillables), and will include containers made from materials or packaging formats that are more difficult to recycle and can end up as contamination in recycling streams, littered, or landfilled. This includes pouches, sachets, biodegradable plastic bottles, compostable packaging, and hard-to-recycle plastic types 3, 4, 6 and 7. These products make up a very small proportion of New Zealand's beverage container volumes, and the registration process will enable greater visibility.

Limitations and assumptions

A key limitation in the analysis is the lack of trend data on litter rates[5] and on recovery and recycling outcomes for beverage containers consumed on commercial premises (ie restaurants and bars). Industry estimates have been used for commercial beverage rates.

The estimate of welfare gains from reduced litter and increased recycling is an important aspect and the Sapere CBA uses an average of willingness to pay studies. While acknowledging the large spread in estimated benefits, the studies represent the best available information and the Sapere CBA has taken a more conservative approach by using a range from the willingness to pay studies and presenting an average.

Key assumptions relating to the scheme financials and cost benefit analysis can be found in Section 4 and in the case of the Cost Benefit Analysis, Appendix 2.

Limitations on analysis of impacts on specific population groups

Household-level analysis necessarily assumes an average household impact as beverage consumption can be influenced, and vary, by any number of metrics at a household level. This interim analysis has not focused on specific population groups per se, international evidence shows that benefits of litter reduction are most significantly found in lower socio-economic communities where the frequency of litter is typically higher.

When considering impacts on Māori, consultation was not specifically targeted to enhance Māori engagement. Further, the timing of consultation announcements did not align with usual channels for wider Māori engagement.

Subject to Cabinet's decision to implement a scheme, we recommend that the Ministry actively provide further opportunities for engagement with Māori groups (whether iwi/hapū or wider representative groups such as Para Kore), should any of these groups wish to engage, throughout the implementation, development and review of the NZ CRS. Further detail will be provided in the final CRS RIS.

Responsible Manager(s) (completed by relevant manager)

Shaun Lewis

Director – Waste and Resource Efficiency

Ministry for the Environment

17 November 2022

5 This will improve over time as Litter Intelligence, New Zealand's national litter monitoring programme, develops but at this stage, does not allow clear trends to be established.

Quality Assurance (completed by QA panel)	
Reviewing Agency:	Ministry for the Environment
Panel Assessment & Comment:	The Ministry for the Environment's Regulatory Impact Analysis Review Panel has reviewed the attached Regulatory Impact Statement A beverage container return scheme for Aotearoa New Zealand, prepared by the Ministry for the Environment. The Panel considers that the information and analysis summarised in the Impact Statement meets the criteria necessary for Ministers to make informed decisions on the proposals in this paper.

Section 1: Diagnosing the policy problem

What is the context behind the policy problem?

The bigger picture: Projected increase in waste generation

1. Global waste generation in high-income countries is set to increase by 19% by 2050.[6] Aotearoa New Zealand creates some of the highest levels of municipal waste per capita in the world.[7]

2. Subsequent to the implementation of the Waste Minimisation Act in 2008, and the introduction of the waste disposal levy in 2009, waste sent to class 1 municipal landfills in Aotearoa New Zealand has increased by nearly 50% over a decade, reaching 3.7 million tonnes in 2018/2019 (or 740 kilogrammes per person, per year).[8] It is estimated that only 28% of all materials that would have been landfilled are recycled, and many landfills are full of otherwise divertible, compostable and recyclable materials.[9]

Consumption is on the rise, while recycling rates remain low and litter prevalence increases

3. It is widely acknowledged that society at large, but particularly in Aotearoa New Zealand, is consuming more and more 'stuff'. This is evidenced by the increasing trend of waste generation over time, outlined above. In contrast to the increasing amounts of waste going to landfill, our relative performance of kerbside recovery of waste material (on average) has declined over the last three years.[10]

4. Increasing volumes of waste not recovered for recycling means a corresponding increase in the amount of waste that ends up as landfill or as litter in our natural and built environments. While comparable litter data globally is in its infancy, several national litter audits elsewhere have demonstrated a marginal increase in litter levels.[11] The 2017/18 Australian litter survey found an average of 39 litter items per 1000m^2 across all sites nationally. In comparison, the 2019 Keep New Zealand Beautiful National Litter Audit (based on a similar methodology) found three times more litter than Australia (an average of 118 items per 1000m^2).

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6 The World Bank, 2019. What a Waste 2.0: A Global snapshot of Solid Waste Management to 2050. https://openknowledge.worldbank.org/handle/10986/30317. Note: this 19% represents daily per capita waste generation in high income countries.

7 https://data.oecd.org/waste/municipal-waste.htm

8 In 2020, New Zealanders sent 3.38 million tonnes of waste to class 1 (municipal) landfills. While there was a slight decrease in waste to Class 1 landfills in 2019 and 2020, with the decrease in 2020 likely largely due to COVID-19, longer term trends suggest the rate of waste disposal is only increasing for many sites around the country. Ministry for the Environment data.

9 Ministry for the Environment data.

10 National kerbside recovery of beverage containers is estimated from council data representing a majority of New Zealand's population. Reported recovery included a three-year period from 2018/19 to 2020/21. For some materials, recovery has actually increased in response to more containers in the market, but nowhere near the rate of container sales growth.

11 https://www.keepbritaintidy.org/news/survey-reveals-litter-increase
https://www.kabc.wa.gov.au/resources/litter-data

5. Together, these waste issues result in various unintentional negative outcomes including but not limited to greenhouse gas emissions[12], physical pollution and subsequent impacts on ecosystems and human health and represent inefficient resource use and lost opportunities for recycling.

Key features of the current regulatory system to manage waste

The Waste Minimisation Act 2008 (WMA)

6. The purpose of the WMA is to: *encourage waste minimisation and a decrease in waste disposal in order to—*

> *a) protect the environment from harm; and*
>
> *b) provide environmental, social, economic, and cultural benefits.*

7. The WMA establishes that territorial authorities (TAs) are responsible for promoting effective and efficient waste management and minimisation within their districts. TAs do this through waste management and minimisation plans (WMMPs), which are revised and updated every 6 years. In preparing WMMPs, TAs must consider the principles of the waste hierarchy.[13]

8. TA responsibilities broadly include waste management, this encompasses beverage container waste but does not set out specific requirements for the management of beverage containers.

9. Part 2 of the WMA outlines obligations for product stewardship. The purpose of Part 2 is to: *encourage (and, in certain circumstances, require) the people and organisations involved 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.*

10. Part 2 enables the Minister to declare certain priority products, which are then required to have an accredited product stewardship scheme.

11. S23(1)(d) provides for the setting of fees for products (whether or not it is declared as a priority product), materials, and waste.

The Litter Act 1979 (Litter Act)

12. The Litter Act 1979 prohibits littering and dumping in public places. It contains provisions for granting enforcement officers and litter wardens powers to issue fines and abatement notices. The enforcement and administration of the Litter Act sits with public authorities, which includes TAs, the New Zealand Transport Authority, airport authorities and several other classes of bodies. TAs have the primary enforcement role.

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12 Waste disposal and treatment produces around 4% of Aotearoa New Zealand's gross emissions. Ministry for the Environment, 2022. New Zealand's Greenhouse Gas Inventory 1990 - 2020 snapshot.

13 A pyramid framework ranking the preferred order of waste disposal, with preventing and reducing waste at the top, and sending to landfill at the bottom.

Proposals to update the regulatory framework

13. The Ministry is currently progressing proposals to repeal the Litter Act 1979 and the Waste Minimisation Act 2008 (WMA) and replace them with a single comprehensive Act. Details are included in the Regulatory Impact Statement titled *Proposals for New Waste Legislation* but in summary, the proposal is for a comprehensive regime (as per figure 1 below) which:
    - sets a clear national direction
    - enables controls to be placed on certain products and materials to promote circularity
    - sets out measures to regulate how people manage waste
    - provides for the collection, use and allocation of the waste levy, and a compliance monitoring and enforcement regime.

Figure 1: Proposed changes to waste legislation

Moving towards a circular economy

14. Alongside proposals to update the regulatory framework, a new waste strategy is being proposed. The new strategy's vision is for Aotearoa New Zealand to be a low emissions, low waste society, built upon a circular economy, by 2050.

15. The strategy will set the direction and guide investment as we move from a linear 'take-make-waste' economy (refer figure 2), which relies on the continued extraction and importation of virgin materials, rather than a circular system, keeping products and materials in use.

Figure 2: The linear and circular economy models

16. The shift towards a circular economy (figure 2) is gaining momentum globally, through multi-lateral initiatives such as the European Union's Circular Economy Action Plan,[14] the Global Alliance for Circular Economy and Resource Efficiency,[15] and the G7 Alliance on Resource Efficiency,[16] as well as the growing number of countries with circular economy strategies and legislation.

17. In addition to the review of the waste strategy and updates to the regulatory framework there are several other work programmes currently under way at the Ministry to support the transition to a circular economy, increase resource recovery and recycling, reduce emissions and litter. These work programmes are set out in table 1 below.

Table 1: The Ministry's wider waste work programme

Waste work programme	Description
Improving household kerbside recycling *(Emissions Reduction Plan critical action)*	Work to align the kerbside waste and recycling collections across TAs to reduce confusion for households and increase the quality and quantity of materials collected through kerbside recycling and introduce organic waste collections across New Zealand. Proposals for kerbside standardisation were publicly consulted on with the CRS proposals in the *Transforming Recycling* consultation held in March – May 2022.
Work on reducing harm from plastics	Shifting away from hard-to-recycle and single-use plastics will help reduce plastic waste, improve our recycling systems and protect our environment. This work includes development of a national plastics action plan, a $50 million Plastics Innovation Fund and guidelines to inform the sustainable use of plastic in Government procurement. New Zealand will be participating in international negotiations under the United Nations for the development of a legally binding Global Plastics Agreement to end plastic pollution. The negotiations commence in November 2022 and are expected to conclude in 2024. The potential scope of a Global Plastics Agreement is the full lifecycle of plastics including marine litter and microplastics.

14 https://ec.europa.eu/environment/strategy/circular-economy-action-plan_en

15 https://ec.europa.eu/environment/international_issues/gacere.html

16 https://www.g7are.com/

Product stewardship	Regulated product stewardship helps put responsibility for a product's lifecycle and waste management on manufacturers, importers, retailers and users rather than communities, councils, neighbourhoods and nature. The Government has declared six priority products for regulated product stewardship under the WMA: plastic packaging, tyres, electronic and electrical waste (e-waste), agrichemicals and their containers, farm plastics, refrigerants and other synthetic greenhouse gases. Beverage containers were also consulted on as a priority product with very high levels of support, however it was recognised that current legislation is inadequate to implement a container return scheme in New Zealand.
Increasing and expanding the waste disposal levy	This work includes: • progressively increasing the levy rate for landfills that take municipal waste from NZ$10 per tonne (set in 2009) to NZ$60 per tonne by 1 July 2024 • expanding the levy to cover additional landfill types, including construction and demolition fills • collecting better waste disposal data. Revenue gathered from the waste disposal levy is used for initiatives to reduce waste and encourage resource recovery (eg, composting and recycling projects).
Investment in recycling infrastructure and other waste priorities	As part of the Covid-19 Response and Recovery Fund announced on 1 July 2020, the Government has invested nearly NZ$100 million in recycling and resource recovery infrastructure initiatives across the country. The Waste Minimisation Fund (WMF) is focused on accelerating Aotearoa New Zealand's transition towards a low emissions and low waste circular economy. The WMF is currently focused on funding infrastructure and enabling systems to reduce landfill emissions from organic waste. Funding is for: • kerbside collection assets, infrastructure and support for the roll-out of services for food scraps and green waste • organic waste processing facilities • resource recovery infrastructure including construction and demolition facilities and transfer station upgrades to enables greater resource recovery, particularly for organics.

Single-use beverage containers: What is the policy problem or opportunity?

What is the specific problem?

Increasing production and consumption of single-use beverages (and their containers)

18. Over 2.57 billion beverages in single-use containers[17] were sold in the New Zealand market in 2020/2021.[18] Beverage container sales grew by 9% and then 7% in 2019/20 and 2020/2021 respectively, from 2.19 billion in 2018/19. Using 2020/2021 data, this equates to an average of approximately 7 million single-use beverage containers sold in Aotearoa New Zealand every day. Industry commentary has noted that, for canned soda

17 For the purpose of this document, single-use beverage containers are defined as beverage containers designed for the purpose of casing a beverage product for one use only, that is, not designed for refilling with the same product.

18 GS1 New Zealand beverage sales data (2019/2020/2021).

beverages in particular, there is significant growth in smaller container sizes and multipack sales.

19. Current production and consumption of beverages in New Zealand almost entirely relies on single-use, one-way beverage containers for ease of production, distribution and on-the-go (convenient) consumption.[19]

Our current recovery systems do not enable nor incentivise the recovery of beverage containers

20. In today's society, time, money and effort are highly valued, therefore the convenience of buying a drink on-the-go (at the right price) appeals to many. Once the beverage container has served its purpose as a 'vessel' for the beverage product, its value is greatly diminished. The empty container can become an inconvenience and, with limited recycling opportunities (ie, away from the 'at-home' kerbside collection service) and with no incentive to recycle, it is perhaps not surprising that consumers either throw empty containers in rubbish bins (destined for landfill) or litter our urban and natural environments.

21. Current resource recovery of single-use beverage containers primarily occurs through the broader provision of kerbside recycling services and, to a much lesser extent, public place recycling bins. In contrast to the growth in beverage container numbers, the relative performance of kerbside recovery (on average) has declined over the last three years.[20] Public place recycling bins are generally being withdrawn across New Zealand as, in addition to cost, they receive/process low volumes and generally poor-quality materials (ie, high contamination rates).[21]

22. Households pay for kerbside services (either directly to a service provider or indirectly through rates) whether they use kerbside services for recycling beverage containers or not. As the majority of containers are currently either captured by the kerbside system or lost to landfill or littered, this is, in effect, externalising the end-of-life cost impact of beverage containers onto councils, ratepayers and the environment.

23. Single-use beverage containers are also recovered for recycling from commercial premises ('commercial recovery') such as restaurants, hotels and apartment buildings. The beverage industry estimates the commercial channel as 15-30% of the total beverage container volume.[22] There is very limited data on commercial recovery of beverage containers in New Zealand, with the exception of glass containers. The total amount of glass beverage containers recovered from commercial premises is estimated to be approximately 15–20% of the volume of glass beverage containers recovered

19 A number of beverage container refill schemes exist, such as the ABC Swappa Crate system which used to dominate the market in in the 1970s. While effective, these schemes have relatively small market share today (~1% by container count in the glass container beer market, in this case) and are generally more expensive per unit volume on account of the more robust containers needed and the recycling/refill system cost being included in the purchase price, even though there is evidence of the substantial emissions savings refilling glass containers can deliver.

20 National kerbside recovery of beverage containers is estimated from council data representing a majority of New Zealand's population. Reported recovery included a three-year period from 2018/19 to 2020/21. For some materials, recovery has actually increased in response to more containers in the market, but nowhere near the rate of container sales growth.

21 Servicing of Wellington City Council (WCC)'s public place recycling bins is $246,000 per year (2020/2021 data). The yearly cost of servicing compared to tonnes of recycling diverted amounts to approximately $10,250/tonne of materials diverted from landfill (glass and co-mingled combined). In comparison, WCC notes that the cost to divert recycling through its kerbside collection is around $600/tonne (noting that WCC has one of the most expensive kerbside systems in New Zealand). Pers. comm. 2021.

22 Ministry communications. 2022.

through kerbside.[23] It is clear however, that the Materials Recovery Facilities (processors of recycling) are not receiving large quantities of mixed recycling that contain significant beverage container volumes. Therefore, current total resource recovery of beverage containers in Aotearoa New Zealand is largely a council/ratepayer funded activity.

Root causes

24. Based on our relative waste performance, New Zealand society as a whole does not take action that recognises the value in waste resources, even though individuals are likely to feel quite strongly about those same values.[24] This is in part because our systems and services are inadequate, which is exacerbated by 'on-the-go' lifestyles and consumption behaviours.

25. The root causes of the single-use beverage container issue include:

- **Social norms:** behavioural psychology evidences the impact of social norms on behaviour; litter is a 'textbook' example used in many behavioural norm theories. Essentially, people are more likely to litter in environments where there is already litter present.[25] Similarly, people are less likely to litter where there is less or no litter present, known as the 'stadium effect'.[26] It is important to note that social norms alone do not govern people's behaviour – rather, it is the balance of personal values, norms, incentives, the removal of barriers (ie, time cost, provision of infrastructure) and, to a lesser extent, information provision.

- **Government regulatory failure:** existing waste minimisation and litter legislation has not resulted in the minimisation of beverage container waste – 'waste minimisation' being the primary purpose of the WMA. Accordingly, existing infrastructure for resource recovery systems (ie, largely kerbside recycling) are not designed to capture away-from-home consumption and disposal of goods. Similarly, public place infrastructure does not enable people to recycle properly. There is currently limited incentive for individuals to take steps to ensure containers are recycled or disposed of correctly, unless they are highly motivated to do so by their own values. Commercial premises (such as cafes, restaurants and bars) are likewise not incentivised nor enabled to recycle empty beverage containers.

- **Externalities and equity issues:** the externalities of the linear take-make-dispose trajectory of single-use beverage containers are not borne by those who benefit from the ongoing sale and consumption of single-use beverages (ie, beverage producers, retailers and consumers). Instead, the costs of litter are borne by the environment and future generations (where the impacts of accumulated litter will be compounded and realised). This results in the over-provision of single-use beverage containers and little-to-no incentive on producers to take responsibility for the containers sold, or to improve the recyclability of their containers.

23 Glass Packaging Forum communications and CRS co-design report.

24 For example, 93% of New Zealanders agreed that it was very or extremely important that people do not litter, and 50% of New Zealanders are very or extremely worried about the impacts of waste.
https://www.knzb.org.nz/download/litter-behaviour-study-report/
https://environment.govt.nz/assets/facts-and-science/science-and-data/new-zealanders-environmental-attitudes.pdf

25 Schultz et al. 2013. Littering in Context: Personal and environmental predictors of littering behaviour.

26 Attr buted to Bates & Hayward,1976. Application and evaluation of strategies to reduce pollution: Behavioral control of littering in a football stadium.

Impacts of the policy problem

Low recovery and recycling, high litter, lost opportunities for recycling and perpetuating unsustainable resource use and extraction

26. The growing gap between increased beverage containers coming into the market and decreasing recovery underscores the overall trend towards poorer recycling performance and compounding of the associated negative impacts such as the littering and landfilling of beverage containers consumed 'on the go' and the landfilling of containers of beverages consumed on commercial premises such as restaurants, cafés and bars. These issues are exacerbated by the absence of an incentive for consumers and businesses to recycle, and the physical infrastructure to enable efficient recycling and recovery in most cities and districts across Aotearoa New Zealand.

27. Of the over 2 billion beverage containers sold in 2018/19, approximately 54% by weight, were recovered for recycling.[27] In 2020/21, this recovery is estimated to have fallen to 45% by weight.[28] The reduction is in part a reflection of the weight bias that glass brings to the data and the significant overall increase in beverage container sales.

28. Corresponding to recovery estimates (which, by weight, are skewed by glass), it is estimated that approximately 1.7 billion containers were stockpiled, littered or landfilled in Aotearoa New Zealand in 2020/21.[29] This means at least half of all beverage containers are lost to the recycling industry every year, which creates broader impacts associated with the avoidable use of resources and energy to produce beverage containers from virgin materials.

29. Low recovery rates equate to beverage containers being a significant source of litter, particularly beverages consumed away from home or 'on the go'.[30] In 2019, beverage containers constituted 66% of recognisable branded litter and 24% of all litter in Aotearoa New Zealand. Glass was the most sold and the most littered beverage material in 2018/19, representing half of beverage container litter items by count.[31]

30. The 2018/19 the Keep Australia Beautiful Litter Audit found an average of 39 litter items (all types) per 1000m^2 across all sites nationally. In comparison, the 2019 Keep New Zealand Beautiful National Litter Audit (based on a similar methodology) found three times more litter than Australia (an average of 118 items (all types) per 1000m^2).

31. Low recovery and recycling rates and high litter rates for beverage containers present various costs to human beings and te taiao:

    - **Environmental and social harms:** Litter pollutes our environment and impacts habitats and wildlife (eg, through animals' ingestion of plastic and the flow on effects of

27 CRS co-design report and MfE estimated commercial recovery.

28 PwC beverage container estimates and MfE estimated commercial recovery.

29 PwC beverage container estimates and MfE estimated commercial recovery.

30 Littering occurs in a range of situations and ways, including items actively disposed of from cars, blowing out of bins, being disposed of beside full bins, and potentially caused by waste and recycling processes. KNZB. 2018. National Litter Behaviour Study.

31 Keep New Zealand Beautiful (KNZB). 2019. National Litter Audit.

this through various ecosystems/food chains).[32][33] It is estimated that about 80% of the litter found in New Zealand's waterways comes from land.[34]

Litter also has economic costs for ratepayers and volunteers (such as the time and labour costs of litter clean ups), and negatively affects human health (eg, through plastic particulates, toxins and broken glass). The prevalence of waste and litter has broader social amenity implications, in particular for lower socioeconomic areas where litter is more common.

- **Unfair burden for councils and rate payers:** The costs of managing litter, waste recovery systems and recycling for beverage containers creates an unfair burden on councils and ratepayers. Councils spend significant budget[35] on recycling collections and MRF contracts, in addition to landfilling costs. In addition, litter enforcement and litter clean-up costs are a burden for councils. For example, litter clean-up costs in Auckland are in the order of NZ$11 million per annum.[36]
- **Lost opportunities for resource recovery and circular use of resources***:* Nearly half of all beverage containers sold to market, roughly 1 billion beverage containers, end up littered or in landfill. Beverage containers are generally made of high value materials such as high-grade plastic (ie, numbers 1, 2 or 5), glass and aluminium.

  The failure to recover and recycle these valuable materials[37] represents lost revenue and business opportunities for existing and new recyclers and manufacturers of recycled products in New Zealand, and contributes to emissions associated with landfilling[38] and the continual production of beverage containers from virgin, rather than recycled, materials.[39] Aotearoa New Zealand's consumption emissions (including trade and embodied emissions associated with product manufacture and distribution) are significant – totalling 60.5 million tonnes CO2-e in 2020.[40] Household consumption

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32 Microplastics (less than 5mm in length) can be produced or broken down from larger plastics. There is an increasing amount of evidence showing that microplastics are widespread throughout the marine environment (Clere et al, 2022; De Bhowmick et al, 2021; PMCSA, 2019). Ministry for the Environment. Our Marine Environment 2022 Report.

33 Schuyler et al., 2018. Economic incentives reduce plastic inputs to the ocean.

34 KNZB. 2019 National Litter Audit.

35 For example, Whanganui District Council is considering implementing a dry recycling and food scraps collection as a result of the Transforming Recycling kerbside consultation proposals. The total cost of rolling out both those collections is estimated at $2.07 million and $1.32 million respectively, plus the cost of processing infrastructure.

36 Sapere Research Group. 2017. Container Deposit CBA. Auckland Council spends an estimated $8.3 million per annum on litter collection from roads, shopping areas, public places, carparks and footpaths. In addition, costs associated with street sweeping, motorway litter clearing, storm water litter management and event clean-up are estimated to conservatively total a further $2.8 million per year.

37 Materials such as steel, aluminium, plastics, fibre (paper and cardboard) and glass are commodities. In New Zealand and internationally there is good demand for clean separated metals, fibre and high-value plastics. Recycled glass is not exported and is constrained by how much we can recycle domestically.

38 Waste disposal and treatment produces around 4% of Aotearoa New Zealand's gross emissions. Ministry for the Environment, 2022. New Zealand's Greenhouse Gas Inventory 1990 - 2020 snapshot.

39 Numerous international studies and life cycle analyses have indicated that manufacturing beverage containers with recycled material uses significantly less energy than using virgin materials, as well as reducing resource extraction emissions. For example, see https://zerowasteeurope.eu/l brary/the-potential-contribution-of-waste-management-to-a-low-carbon-economy/. NB: there is limited specific data for emissions saved from recycling in New Zealand. Key industry sources all cite the emissions reduction benefits of recycling. The analysis prepared in support of this RIS has used default data. Refer Appendix 2.

40 This total excludes export emissions, relative to 78.8 million tonnes CO2-e in 2020 for New Zealand's total domestic production emissions.

Statistics New Zealand. See https://www.stats.govt.nz/indicators/new-zealands-greenhouse-gas-emissions and https://www.stats.govt.nz/news/imports-account-for-half-of-new-zealands-carbon-footprint/

emissions made up 71% of consumption emissions, of which 'food, beverages, tobacco and illicit drugs' accounted for 27.1% (following transport at 37%).

Broader impacts and implications for stakeholders

32. Single-use beverages (and their containers) play a role in many peoples' lives and the New Zealand economy. Addressing the issues associated with beverage containers will therefore have wide-ranging impacts for households, communities, small- and large-scale businesses in the beverage, packaging, retail and waste industries, as well as local councils.

33. Table 2 below covers stakeholder views on the broader problem of beverage container recycling and litter. Note: stakeholder group categories in table 2 are generalised, subgroups within these categories may have differing views/impacts to those described.

Table 2: Stakeholder interest in and high-level impacts of single-use beverage container issue

NB: the table below was completed as part of the interim regulatory impact statement, prior to public consultation held in March-May 2022. Further feedback from stakeholders *that relate to impacts of the policy problem* are included, where relevant, in Section 3 of this RIS.

Stakeholder group	Nature of interest	Perceived impacts of beverage container issue
Local government	• Efficiency/access • Cost	Councils and ratepayers bear the substantive costs of current beverage container resource recovery and recycling systems, and associated litter clean-ups. Territorial authorities are responsible for waste management under the WMA 2008.
Large beverage producers (non-alcohol)	• Product ownership • Market access • Brand reputation	No regulated product stewardship/producer responsibility for beverage producers at the end-of-life for their product's packaging. Strong interest in brand sustainability, while managing costs efficiently. Voluntary product stewardship scheme in place for glass containers (approximately 8% of glass beverages are non-alcohol).
Large beverage producers (alcohol)	• Product ownership • Market access • Brand reputation	No regulated product stewardship/producer responsibility for beverage producers at the end-of-life for their product's packaging. Strong interest in brand sustainability, while managing costs efficiently. Voluntary product stewardship scheme in place for glass containers (approximately 92% of glass beverages sold are alcohol drinks). Significant over-supply of glass to New Zealand market relative to domestic processing capacity. Industry seeking to establish an alternative regulated scheme for glass (ie, both beverage and non-beverage containers).
Commercial recyclers (collectors and processors)	• Material and market access • Operational	Provide most existing services/facilities for recovery/reprocessing (including but not limited to beverage containers). Lost recyclable resources equate to lost economic opportunity.
Public community groups and NGOs	• Purchase cost and product choice • Environmental and social impacts	The public are the primary consumers of single-use beverage containers There is increasing public awareness of environmental harms posed by litter. The public bear the costs of litter (through voluntary or council-funded clean-ups). Community groups organise litter clean ups and some data collection/reporting on litter. Some NGOs operate waste collection/resource recovery sites (including for but not limited to beverage containers). Some NGOs operate zero waste/product stewardship/litter reduction campaigns and education.

Retailers and supermarkets	• Material and market access • Brand reputation	Primary distributors of the market share of single-use beverage containers / beverage products. 95% of New Zealanders live within 20-minute drive from a supermarket. Have sponsored previous waste-related or recovery initiatives (eg, soft plastics).

How is the status quo expected to develop?

Continued increase in the production and consumption of single-use beverage containers, no change in recovery options/processes

34. The problems identified above are expected to worsen. Single-use beverage container consumption is expected to continue to increase,[41] while the behaviours and systems to enable the recovery and recycling of beverage containers will remain largely unchanged. In the absence of intervention, the counterfactual status quo for the policy issues associated with beverage containers would see an estimated 1.7 billion beverage containers stockpiled, landfilled or littered in Aotearoa New Zealand per year, for years to come. This is assuming that consumption rates stay as they currently are, where these are anticipated to continue to increase.

35. Public awareness of waste issues may continue to grow and as such we may also see increased voluntary efforts from industry, and/or communities, to address beverage container litter and resource recovery. We note that despite decades of litter campaigns and trials of public place recycling, these interventions have resulted in little change to the status quo, and have as yet failed to stem the increasing consumption and disposal of single-use beverage containers.

36. There may also be a positive shift towards refillable and reuse systems for beverage containers. However, developing a reuse system at scale involves co-ordination and the development of infrastructure, so is therefore not anticipated to substantially address the policy problem, even in the medium term. Further discussion of both voluntary efforts from industry and increase in reuse /refillables is provided in Section 2.

37. Beverage containers not recovered for recycling or reuse each year represent a growing lost opportunity for recycling and inefficient resource use associated with the continued extraction and production of virgin materials for beverage containers.

38. The waste system in New Zealand is currently undergoing reform. The updated waste strategy and regulatory framework and additional work programmes outlined in table 1 address some of the key waste issues in Aotearoa New Zealand. However, none of these programmes specifically target beverage container recycling ‘away from home’ or from commercial premises. Improvements to kerbside recycling will reduce contamination associated with beverage containers in recycling streams, but kerbside recovery for the ‘at home’ consumption of beverage containers is already high,[42] therefore improved kerbside systems are not expected to significantly impact this number.

39. Further, there is evidence that the decline of public place recycling bins is occurring due to their excessive cost. A recent Horizons survey undertaken on behalf of packaging

41 Beverage container growth is expected to continue at a rate of at least 2% per annum (model assumptions), noting container sales growth has been 9% and 7% per annum respectively for 2019/20 and 2020/2021, , mainly driven by the non-alcohol sector.

42 Approximately 90% of beverage containers consumed at home are recovered through kerbside recycling. Sunshine Yates Consulting / WasteMINZ TAO Forum. 2020. Rethinking Rubbish and Recycling.

industry stakeholders found that 50% of consumers would not walk more than 20 meters to find a recycling bin (62% won't walk more than 40 meters),[43] suggesting that "unless consumption is highly concentrated in an area, recycling bins would need to be placed at a very high frequency to deliver improved collection outcomes".[44] New Zealand lifestyles on the other hand are increasingly on-the-go and products and services are becoming increasingly convenience-oriented.

40. The plastics work will shift some packaging formats to more recyclable plastic grades, but this is not expected to have a significant impact on beverage container packaging as these products are typically already made from the more recyclable plastic grades.

What objectives are sought in relation to the policy problem?

41. The three overarching policy objectives for improving outcomes associated with beverage containers are to:
    - **increase circularity of beverage containers**: through a high performing scheme resulting in, reduced litter, improved recycling outcomes and reduced emissions;
    - **enable a producer responsibility model:** shifting the costs of resource recovery and waste minimisation from ratepayers and councils to the producers, retailers and consumers of beverages
    - **produce community benefits for New Zealand:** by growing our circular economy, providing for community participation including fundraising opportunities, and providing for accessible and convenient beverage container return points, making it easy for consumers and businesses to do the right thing.

42. The primary objective is to improve resource recovery outcomes of beverage containers (specifically, increase recycling and reduce litter). Secondary to this is shifting the costs of beverage container recovery to the responsible supply chain (consumers and producers) as this will encourage changes higher up the waste hierarchy, such as reducing the waste produced in the first instance.

43 Horizon Research. March 2022. Packaging Survey.

44 Glass Packaging Forum (GPF) and Grant Thornton. August 2022, Product stewardship scheme design for glass.

Section 2: Deciding upon an option to address the policy problem

What criteria will be used to compare options to the status quo?

43. The Ministry applied the following criteria to evaluate options against the status quo:

- Effectiveness – Will the option achieve one or more of the following:
  - significantly increase beverage container recovery and improve recycling and circular outcomes for beverage containers?
  - reduce beverage container litter?
  - shift the costs of resource recovery and waste management associated with beverage containers from ratepayers and councils to producers and consumers of beverages?
  - reduce emissions?
- Cost efficiency – Can the option be implemented without placing unnecessary costs on stakeholders (eg, households, businesses or councils)?
- Alignment with strategic direction – Will it help progress towards the Government's goals for a more circular, low-emissions Aotearoa New Zealand (with consideration of increased employment and community participation opportunities)?
- Achievability – Is it achievable alongside amendments to waste management legislation currently underway? Is it easy, timely and practical to implement?

44. In our analysis of the options to address the beverage container issue, we applied the following weightings:

- double weighting for effectiveness, as this closely reflects the key objectives of the policy intervention and addresses producer/consumer responsibility
- single weighting for the remaining three criteria.

What scope will options be considered within?

Former Minister's commissioning sparked work on the option of a NZ CRS

45. In late 2019, then Associate Minister for the Environment (Hon. Eugenie Sage) instigated work on the option of a CRS, driven by an increasing international evidence-base and growing domestic calls for a NZ CRS,[45] including recommendations from Local Government New Zealand in 2018[46] and the Prime Minister's Chief Science Advisor.[47]

46. Then Associate Minister for the Environment approved funding[48] for Auckland and Marlborough District Councils (the Project Team) to work with stakeholders to investigate and provide recommendations on the design of a potential CRS for New Zealand.

45 A 2020 Consumer New Zealand poll showed 78% public support for a CRS, with 10% undecided.

46 See: 2018 LGNZ remit on waste, passed with 96% support from the sector.

47 Prime Minister's Chief Science Advisor, 2019. Rethinking Plastics.

48 Funding was provided through the Waste Minimisation Fund.

47. The Project Team developed its recommendations through an iterative co-design process. This involved review and input from a multi-stakeholder Scheme Design Working Group (SWDG) and a Technical Advisory Group (TAG), as well as extensive global research.

48. The SDWG consisted of a broad range of representatives from the beverage industry, the packaging industry, retailers, local government, recyclers/waste collectors, and non-government and community organisations. While there was clear overall support for a CRS from the SDWG, the co-design process elucidated split stakeholder views on several key issues within the specific design settings of a NZ CRS.

49. Key stakeholders have been engaged throughout the CRS policy process either as part of the co-design's SDWG or through subsequent engagement with the Minister and/or Ministry officials.

50. The co-design project produced substantial research, modelling, cost-benefit analysis and identified key design options for a NZ CRS. The project concluded in late 2020 with the submission of the Project Team's final report and recommendations.

Investigating a NZ CRS: A Government priority

51. The Labour Party's 2020 Election Manifesto noted a commitment to investigate a NZ CRS. Implementing a CRS is also a recommendation of the Prime Minister's Chief Science Advisor's 2019 Rethinking Plastics report. Further, work on a CRS aligns with the New Zealand Labour Party and Green Party of Aotearoa's Cooperation Agreement.

52. Building on the momentum and outputs from the co-design project, the Ministry began policy work on the option of a CRS in 2020/2021. This involved additional analysis and engagement with stakeholders, in order to develop comprehensive advice and options for Ministers (including on the range of design considerations and combinations). Options considered are set out in the rest of this section and section 3 of this RIS.

Public consultation on the Transforming Recycling proposals

53. Following a suite of Cabinet papers seeking direction on appropriate scheme design settings, in February 2022 we sought Cabinet approval to publicly consult on the option of a NZ CRS (with the interim RIS attached). Following Cabinet's agreement to consult, the *Transforming Recycling* public consultation ran from 13 March to 22 May 2022. This was a joint consultation document, seeking feedback on proposals for:
    - a beverage container return scheme
    - improvements to household kerbside recycling
    - separation of business food waste.

54. Consultation elucidated in depth feedback from stakeholders previously engaged in the CRS co-design project, as well as feedback from a much wider range of interested parties including the general public, local government bodies and community groups.

55. The majority of the consultation feedback is incorporated into our analysis in the various key scheme design options in section 3. Where relevant, consultation feedback is included in the broader policy options analysis below.

What options are being considered?

56. Note that, with the exception of the status quo scenario, the options outlined below are not mutually exclusive and could be combined to address the beverage container issue, noting that different options, or combinations thereof, will have varying levels of impact on the issue. A comprehensive policy approach could include a mix of components such

as law change, targeted monitoring and enforcement, establishment of new systems, and enabling infrastructure and public education to encourage new waste behaviours.

Option one – Status quo

57. Continue business as usual, as described in section 1 above. If no action were taken, beverage container growth is expected to continue at a rate of at least 2% per annum (model assumptions), noting container sales growth has been 9% and 7% per annum respectively (2019/20 and 2020/2021), mainly driven by growth in non-alcohol beverage containers. Meanwhile the systems and behaviours to enable the recovery and recycling of beverage containers will remain largely unchanged.

Option two – Increase powers under the Litter Act 1979

58. The Litter Act 1979 (Litter Act) prohibits littering and dumping in public places. It contains provisions for, among other things, granting enforcement officers and litter warden powers to issue fines and abatement notices. The enforcement and administration of the Litter Act sits with public authorities, which includes territorial authorities, the New Zealand Transport Authority, airport authorities and several other classes of bodies. Territorial authorities have the primary enforcement role.

59. The Litter Act has not been substantively amended since its enactment. The Litter Act is being reviewed as part of the broader waste legislation review (which includes the review of the Waste Minimisation Act 2008 (WMA). Proposals under consideration involve a new general duty of care on all New Zealanders to manage and dispose of waste appropriately, including stopping it becoming a pollutant or litter, with regulations setting out specific details of requirements and offences. Taking forward this option could involve the new regulatory framework enabling: stronger penalties; more enforcement options; clearer responsibilities for monitoring and enforcement; and regular reporting and data collection provisions.

Option three – Increase the accessibility of public place recycling (PPR)

60. Public place recycling (PPR) refers to the away-from-home recycling infrastructure (bins) provided in public places such as streets, transport hubs, and tourism and hospitality venues. PPR aims to reduce litter and increase the recovery of away-from-home packaging. New Zealand's existing public place recycling schemes are generally carried out by territorial authorities, often in conjunction with one-off grants from the packaging industry.

61. A scaled-up version of this type of collection is sometimes deployed in rural locations or at community recycling drop off points. It often involves a containerised hook bin alongside an access platform with posting slots for various recyclable materials including, and in some cases specifically for, beverage containers (eg, bottle banks).

62. This option would see increased numbers and frequency of sites nationally, and increased servicing of recycling bins for public use, particularly targeted in areas where beverage container litter is pervasive.

Option four – Regulated enforcement of commercial recycling

63. Commercial recycling is associated with small businesses and larger commercial activities, including the hospitality sector, multi-unit developments and apartment complexes (ie, those not serviced by rates-funded kerbside collections). These collections can be undertaken through a direct contract between private parties or, where permitted/available, through bespoke council contracted kerbside collections.

64. Bylaw controls can be used by councils to better manage recycling (wherever it is occurring) and use of public bins. For example, a bylaw can include:

- a licencing regime and approvals process for any individual or company involved in collecting, transporting and managing/disposing of waste that also enables councils to inspect and obtain information from licenced operations
- a requirement for separation of recyclable and compostable materials from other waste deposited/placed on public places (eg, limits on the percentage of recyclable or organic material in waste collections – whether they be public place, CBD collections, kerbside or private contract collection)
- a requirement for a Waste Minimisation and Management Plan for new developments where councils have the opportunity to ensure adequate provision is made for materials separation and management proportional to the occupancy and use of the building/site.

Option five – Apply product stewardship fees

65. As outlined in section 1 above, the costs of managing litter, waste recovery systems and recycling for beverage containers are currently borne by councils and ratepayers and the environment. Meanwhile the benefits of the increasing sale and consumption of beverages in single-use containers are primarily experienced by beverage producers, retailers and consumers. Extended producer responsibility (EPR) is a type of product stewardship that aims to shift the responsibility of a product's entire life cycle – from the design and manufacturing of a product right through to its disposal or end-of-life – to the responsible producers. In doing so, EPR seeks to internalise negative environmental and societal costs to instead be borne by the producer.[49]

66. An existing way EPR can be applied in Aotearoa New Zealand is through product stewardship fees. Product stewardship fees can be applied to materials or products to fund end-of-life waste management costs via a product stewardship scheme. An advanced materials recycling fee is a type of product stewardship fee that could fund the costs of different beverage packaging formats being successfully recycled or, at a minimum, beneficially reused.

67. Under existing legislation, application of a product stewardship fee to beverage containers could enable a number of options, including:

- declaration of a priority product and an alternative industry-led scheme
- applying a recycling fee to beverage packaging to recover costs for its end-of-life management.

68. The existing legislative framework for product stewardship is currently under review, as part of the review of the WMA.

Option six – Implement a container return scheme (CRS) (apply product stewardship fees and a refundable deposit incentive)

69. A CRS is a resource recovery scheme and type of product stewardship that incentivises consumers and businesses to return beverage containers for recycling or refilling through the application of a refundable deposit at purchase. When someone buys a drink, they

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49 OECD. 2005. Analytical framework for evaluating the costs and benefits of extended producer respons bility programmes.

pay a scheme fee (where applicable) and a refundable deposit,[50] in addition to the normal price of the drink. Empty beverage containers are 'redeemed' in exchange for the deposit refund at designated collection points.

70. Globally, 51 schemes operate, with seven more committed and 16 more proposed.[51] Every Australian state has, or is in the process of implementing, a CRS. Schemes vary significantly in terms of their design and requirements, as does scheme performance (ie, recovery of beverage containers).

What options are not being considered?

71. Options that were not included as part of this broader options analysis include:

Table 3: Options not included in the broader policy options analysis

Option	Description
Ban or phase-out of single-use plastic bottles	Greenpeace Aotearoa recently ran a petition to ban all single-use plastic bottles, which garnered over 100,000 signatures. Such a ban or phase-out is not considered in this analysis because it would be inconsistent with international trade policy. It may also have negative unintended consequences, such as producers and consumers shifting to less recyclable packaging materials/formats such as liquid paperboard or materials with a higher carbon footprint, such as glass.
Education campaign	Education campaigns are considered useful tools to supplement other policy interventions. Multi-pronged interventions have greater impact on influencing pro-environmental behaviours. While information provision and persuasion together may lead to improved pro-environmental behaviours, an education campaign alone would also not address the wider chain of responsibility, nor the infrastructure needed, to shift responsibility back to producers and consumers. Considering education campaigns alongside the chosen policy option will likely enhance policy outcomes.
Refillable network for beverage containers	Refillable containers have an important role to play in facilitating the transition from a linear economy to a circular economy. Reported environmental benefits of refillable beverage containers compared to single-use (and recyclable) containers include savings in energy needed to extract raw materials and manufacture new bottles, reduced emissions and waste. Moving up the waste hierarchy towards refill/reuse is aligned with circular economy objectives and will help New Zealand achieve emissions reduction targets. A large-scale refillable beverage system for New Zealand would require new and different logistical management alongside national or regional collection and sterilisation infrastructure. Further investigation is required to understand how existing or future infrastructure could support a shift toward reusable/refillable containers.[52] Consultation feedback on refillables found that 82% of submitters who responded support a requirement for a NZ CRS to support the NZ refillables market. A key element of implementing a NZ CRS would include procurement and development of scheme infrastructure (the return network and consolidation facilities), including

50 Ministry modelling to date assumes 100% pass through of costs (scheme fees) to consumers. However, there is evidence that scheme fees are not always passed through at 100%.

51 Reloop Global Deposit Book. 2022. 16 proposed schemes includes the proposal for a NZ CRS.

52 Limited information is currently available on New Zealand's reuse systems. Some New Zealand businesses are considering or have already established (or re-established) their own return reuse/refillable networks for their products, taking the lead to develop a low-waste, low-carbon circular economy.

The Ministry is undertaking further work to develop and analyse options for domestic beverage reuse/refilling systems, and potential options for how it might operate alongside a NZ CRS.

	consideration for how CRS infrastructure could support a future shift to reusable/refillable containers.
Improvements to kerbside recycling	The Government is also proposing to measure and improve the performance of household kerbside recycling collections. Household kerbside collections vary significantly across New Zealand. There is no national consistency on what materials are collected at kerbside, which leads to public confusion and high levels of contamination. As a result, potentially recyclable materials are sent to landfills. Standardising the materials collected for kerbside recycling nationally would reduce household confusion and contamination, improve the quality of recyclable material and divert more materials from landfills. In addition, best-practice collections systems and food scrap collections would accelerate our progress towards a circular economy. This would complement work to address the beverage container issue but is not considered in this options analysis because the kerbside work programme is already in train and primarily addresses beverage containers consumed and disposed of at home, rather than away from home. Where services exist, most ratepayers pay for kerbside services whether they use them or not.

How do the options compare to the status quo/counterfactual?

Scoring: 2 = yes 1 = somewhat 0 = unknown -1 = no

	Option one – Status quo	Option two – Increase powers under the Litter Act 1979	Option three – Increase the accessibility of public place recycling (PPR)	Option four – Regulated enforcement of commercial recycling	Option five – Apply product stewardship fees	Option six – Implement a container return scheme
Effectiveness *(double weighting)* – will the option achieve one or more of the following: • significantly increase beverage container recovery and improve recycling and circular outcomes for beverage containers • reduce beverage container litter • shift the costs of the beverage container issue from ratepayers and councils to producers and consumers of beverages • reduce emissions?	-1 (-1 x 2 = -2)	0	-1 (-1 x 2 = -2)	1 (1 x 2 = 2)	1 (1 x 2 = 2)	2 (2 x 2 = 4)
	Current settings do not enable high levels of resource recovery and recycling nor prevent litter associated with beverage containers. Costs are borne by councils and ratepayers. Beverage container embodied emissions are relatively high.	Some positive impact on litter but is unlikely to increase container recovery rates for away-from-home consumption (ie, 'on-the-go' or commercial consumption of beverages). Even if a beverage container is not littered, it does not guarantee that the container is recovered for recycling. This option does not address the issue of beverage container collections costs being largely borne by ratepayers.	May reduce litter but limited impact on beverage container recovery (increased number of receptacles does not equate to greater volumes or quality of recovered material). PPR bins can also become a source of litter if not maintained frequently enough, which increases their operational cost for local authorities. The costs of maintaining PPR bins almost always falls to local authorities – more bins at the scale needed would drive	Would improve recovery and recycling of the key beverage container recycling streams to some degree, but still relies on an enforcement approach which has had limited effect to date where councils have regulated through bylaw controls.[53] Negligible impact on away from home recycling (on-the-go) and negligible impact on litter reduction. Cost for councils for enforcement could be significant in the absence	Would improve recovery and recycling of the key beverage container recycling streams to some degree (noting that in the absence of an incentive to recycle, recovery may not increase significantly). Negligible impact on litter reduction as no financial incentive (refundable deposit) or infrastructure (besides bottle banks and PPR bins) to capture away from home containers. Shifts costs/ responsibility from	A refundable deposit incentivises the return of beverage containers, with a likely 85–90% recovery rate in NZ (assuming the scheme consultation settings). International examples have seen on average a 60% reduction of beverage container litter and the impact is also likely to see a 'stadium effect' – a reduction in other forms of litter as well.[54] [55] Beverage containers recovered through a CRS are generally clean and good quality materials (reduced contamination). Shifts costs/ responsibility from councils and ratepayers to producers. Depending on scheme design, potential for high impact on beverage container embodied

53 For example: Auckland Council's solid waste bylaw controls.

54 While not included in the cost-benefit analysis, the stadium effect is well recognised, and a sensitivity test suggests this impact would significantly increase the BCR (from 1.47 to 1.70-2.43).

55 In a 2017 report for Auckland Council, Sapere Research Group previously estimated that the costs of litter collection and public space maintenance, specifically associated with beverage containers that would be avoided if a CRS was implemented, would be between NZ$2.9 million–NZ$4.4 million per annum.

	Option one – Status quo	Option two – Increase powers under the Litter Act 1979	Option three – Increase the accessibility of public place recycling (PPR)	Option four – Regulated enforcement of commercial recycling	Option five – Apply product stewardship fees	Option six – Implement a container return scheme
		Very limited expected impact on beverage container embodied emissions.	significant cost increases with limited additional benefit. Limited impact on beverage container recovery and, therefore, embodied emissions.	of other further incentives to recycle. Limited impact on beverage container embodied emissions – does not address container-to-container market capacity issues	councils and ratepayers to producers. Some impact on beverage container embodied emissions associated with increased recycling, potential to address container-to-container market capacity issues through investment if scheme fees set high enough and scheme fees are subject to eco-modulation.	emissions – high resource recovery and offers opportunity to address container-to-container market capacity issues through a market response mechanism, eg, eco-modulation fees.[56]
	-1	-1	-1	1	1	2
Cost efficiency – can the option be implemented without placing unnecessary costs on stakeholders (eg, households, businesses and/or councils)?	Current settings see high rates of unrecovered beverage containers (littered, stockpiled or landfilled), which represents inefficient use of resource and a significant lost opportunity for recycling. Kerbside system costs are borne by councils and households, whether or not they use the service for recycling beverage containers. Environmental impact (litter, embodied	Implementation, compliance and enforcement costly for councils, given that littering of beverage containers is frequent and low level.	Costly (per tonne managed) for councils to service PPR sites – inefficient option for scaled up recovery PPR in New Zealand has been recognised as a highly inefficient means of achieving resource recovery at scale (ie, relative to kerbside) – one such review noted the cost of recycling via PPR	Some small change in costs to consumers (increased commercial resource recovery costs would likely be passed on at some level). Cost for councils for enforcement could be significant in the absence of other further incentives to recycle. Regulated enforcement for commercial recovery does not address market	Scheme costs are linear (assuming pass through to consumers). Costs shift from councils and ratepayers to producers and consumers of beverage containers.	Scheme costs are largely circular, eg, refundable deposit (assuming pass through to consumers). Costs shift from councils and ratepayers to producers and consumers of beverage containers.

[56] See section 3, 'Additional scheme considerations: Scheme financials, Eco-modulation' for more information.

	Option one – Status quo	Option two – Increase powers under the Litter Act 1979	Option three – Increase the accessibility of public place recycling (PPR)	Option four – Regulated enforcement of commercial recycling	Option five – Apply product stewardship fees	Option six – Implement a container return scheme
	emissions) and end of life management costs are largely externalised by the beverage industry and associated supply chain.		bins. was estimated at NZ$6,500 per tonne.[57]	issues (eg, glass oversupply).		
	-1	1	1	1	1	2
Alignment with strategic direction – will the option help progress towards Government's goals for a more circular, low-emissions Aotearoa New Zealand (with consideration of opportunities for increased employment or community participation)?	Business as usual settings are not aligned with achieving broad scale waste minimisation, high levels of resource recovery, reduced emissions and litter reduction outcomes. Our current disposal-centric resource management system provides fewer employment opportunities than a resource efficient circular economy would.	Review of the Litter Act is already underway, this is highly aligned to strategic direction, however, in this context, a stronger regulated approach to litter is considered complementary to other behaviour change incentives and there is limited opportunity to increase resource recovery of beverage containers.	Partially aligned – PPR is expensive and cannot deliver scale recovery of beverage containers. Some services are likely to continue, however, as there is a public expectation in many parts of New Zealand that the service should be available. Hook bin services in remote and rural situations are strategically aligned, but do not incentivise recovery.	Aligned, increased commercial recovery/recycling of beverage containers would help improve recycling outcomes. However, the option ultimately relies on compliance and enforcement – which is practically difficult to achieve in the absence of other incentives.	Product stewardship is strongly aligned with strategic direction towards a circular economy – likely less effective in the context of beverage container recovery, particularly for beverages consumed 'away from home' and there is no incentive to increase recycling/reduce litter in this scenario.	A container return scheme is strongly aligned with strategic direction towards a circular economy – includes both a scheme fee and a refundable deposit which provides the incentive to recycle (and not litter).

57 https://wellington.govt.nz/news-and-events/news-and-information/our-wellington/2021/06/public-place-recycling#:~:text=Wellington%20City%20Council%20will%20remove,and%20actions%20towards%20public%20recycling

	Option one – Status quo	Option two – Increase powers under the Litter Act 1979	Option three – Increase the accessibility of public place recycling (PPR)	Option four – Regulated enforcement of commercial recycling	Option five – Apply product stewardship fees	Option six – Implement a container return scheme
	0	2	-1	1	2	2
Achievability – is it achievable alongside amendments to waste management legislation currently underway? Is it easy, timely and practical to implement?	N/A	Would align with review of waste legislation currently underway. Requires resources to safely and effectively enforce (eg, data and privacy protections and procedures for enforcing fines).	Some PPR schemes previously deployed are now removed – very high-cost model, impractical for scale of recovery proposed (over 1 billion additional containers).	Requires bylaws under current legislation Waste legislation review process already in train could be implemented directly under new legislation. Enforcement approach likely needed to ensure compliance (potentially litigious, costly and ineffective on its own).	Achievable under current legislation: limitations for application of scheme fees under current legislation including eco modulation. New legislation development underway, a better option in order to introduce scheme fee eco-modulation.	Implementation of a CRS requires bespoke legislation. Waste legislation review process underway. An appropriate vehicle for new CRS legislation, particularly for application of scheme fee eco-modulation.
Weighted total score	-4	2	-3	5	6	10

What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

Ranking of options (from most to least preferable)

1) Implement a container return scheme (combination of applying a refundable deposit and product stewardship fee)
2) Apply product stewardship fees (ie, a 'no-refundable deposit' scheme)
3) Regulated enforcement of commercial recycling
4) Increase powers under the Litter Act 1979
5) Increase the accessibility of public place recycling
6) Status quo

Summary: narrative analysis of options

Increase powers under the Litter Act 1979 (Litter Act)

72. Amending the Litter Act 1979 (Litter Act) would not prevent minor litter offences from occurring on their own. Minor littering offences (eg, cigarette butts and beverage containers) are intensive to monitor, enforce and prosecute. A comprehensive response requires broader system change that also promotes, enables and incentivises good behaviour as well as improving the legislative framework that targets this illegal and harmful behaviour.

73. Improvements to the monitoring and enforcement of littering would be complementary to another option, but in itself would not address resource recovery nor recycling outcomes for beverage containers. Even if a beverage container is not littered, it does not guarantee that the container is recovered for recycling, as it may still end up in a rubbish bin or contaminating other waste streams.

Increase accessibility of public place recycling (PPR)

74. The waste diversion benefits of public place recycling (PPR) come at a high transaction cost, up to 10 times more per tonne of material otherwise diverted through kerbside. Creating more PPR bin sites does not guarantee litter reduction or greater away-from-home recovery. Recent packaging industry research suggests 50% of consumers would not walk more than 20 meters to find a recycling bin (62% won't walk more than 40 meters)58 meaning that "…recycling bins would need to be placed at a very high frequency to deliver improved collection outcomes".[59]

75. Over the years, many PPR schemes have been trialled (often with industry funding support for the 'bin'frastructure), promoted and, in the end, removed due to excessive operational costs for councils to service the recycling bins for what is very limited additional recovery/benefit.[60] Existing PPR could be further enhanced by education campaigns and broader system-level change.

58 Horizon Research. March 2022. Packaging Survey.

59 Glass Packaging Forum (GPF) and Grant Thornton. August 2022, Product stewardship scheme design for glass.

60 For example, Wellington City has twice installed and later removed PPR bins since New Zealand hosted the Rugby World Cup in 2011. In both instances, very high costs and marginal benefits were key rationale behind the removal. In 2021 Wellington City Council announced the removal of PPR bins citing the cost of recycling via PPR bins estimated at NZ$6,500 per tonne.

Regulated enforcement of commercial recycling

76. Depending on how it is enacted, regulated enforcement of commercial recycling activities would help to increase the recovery of beverage containers and other recyclables used in commercial spaces. This would target an estimated 15-30% of the total beverage container market, but would not improve outcomes for beverages consumed 'on the go' and provides little additional incentive for businesses to recycle.

77. Commercial recycling relies on businesses choosing to provide additional space necessary for separate bins and often, higher costs with collections. In practice, compliance and enforcement of commercial recycling is costly and, like most enforcement activities, best utilised at the margins of an otherwise well-incentivised population where the social norm and economic incentives enable behaviour that does not create negative consequences. For example, Auckland Council has such powers in its bylaws already and notes limited effect using an enforcement approach for separation of materials in commercial settings (including beverage containers) relative to the scale of kerbside recovery.

Apply product stewardship fees

78. A 'product stewardship fee only' scheme for beverage containers (ie, with no refundable deposit incentive) would help shift costs to those responsible for the production and consumption of beverage products but would not directly incentivise consumers to recycle beverage containers or reduce litter. The 'on-the-go' and ubiquitous consumption of a very high number of beverage containers (approximately 7 million per day in New Zealand), means the disposal and littering of single-use beverage containers, poses a specific geographically dispersed policy problem. Applying only a product stewardship fee to beverage containers does not recognise/address *how* beverage containers are disposed of, and therefore would fail to leverage consumer and business behaviour change as a central and critical mechanism for increasing the recovery (and therefore reducing the associated litter) of single-use beverage containers.

https://wellington.govt.nz/news-and-events/news-and-information/our-wellington/2021/06/public-place-recycling#:~:text=Wellington%20City%20Council%20will%20remove,and%20actions%20towards%20public%20recycling

Case study: The Glass Packaging Forum (GPF)'s product stewardship proposal for glass containers

In September and October 2022, following public consultation in March-May 2022, the Glass Packaging Forum (GPF) circulated an alternative proposal for a separate (glass only) product stewardship scheme that would apply a scheme fee only (no refundable deposit) and leverage the existing kerbside system.

The proposal does not establish how a non-deposit 'fee only' scheme would incentivise consumer/business behaviour change towards increased recycling or a reduction in litter, instead relying on complementary regulatory requirements such as colour separate recycling of glass beverage containers at hospitality venues. For clarity, this would require at least three new separate bins for glass recycling alone at bars, hotels, restaurants etc. While this may incentivise businesses to move away from glass containers, in practice it would rely on a compliance monitoring and enforcement approach, and therefore has similar issues to the 'enforcement of commercial recycling' option.

A key benefit of the GPF's proposal is that more glass would be recycled into glass bottles, significantly reducing emissions. However, the report assumes a CRS would not also achieve this outcome. Further, the GPF proposal includes the assumed benefits of eco-modulation and in its comparison, does not equally apply the same benefits to the NZ CRS. Eco-modulation of NZ CRS fees was proposed and broadly supported.

The GPF's proposal also presents 'cost per container' analysis and comparison that is no longer consistent with the final NZ CRS analysis and modelling. The treatment of the refundable deposit as GST inclusive significantly reduces the net cost for consumers of a NZ CRS. The glass proposal estimates its net cost of 4.7 cents per container in year one for beer bottles and 10.1 cents per container for a wine (the proposed scheme is weight-based). Under the 20 cent deposit scenario, the NZ CRS is estimated to have a 4 cent net scheme cost for all glass beverage containers in year one.

The GPF glass proposal has drawn out many key insights, including that recovered glass sent to Australia for recycling into new beverage containers has a lower carbon footprint than glass landfilled, stockpiled or crushed and used for aggregate in New Zealand.

Disposal or utilisation of glass as aggregate is the norm for significant volumes of glass captured by recycling systems in New Zealand today (at least 75,000 tonnes or 39% of 'the recovered volume'). This underscores the importance of the role of incentivising increased recovery through a scheme and then the eco-modulation of scheme fees to ensure glass container-to-container outcomes are achieved, ideally onshore in New Zealand. It is noteworthy that this is now recognised by the GPF.

Eco-modulation: a variable fee pricing mechanism used to reflect the costs of recycling a given product. The fee typically increases when a product/material is hard-to -recycle, whereas easy-to-recycle products/materials may have lower scheme fees, encouraging producers to use readily recyclable materials. A more advanced application of eco-modulation will provide market signals towards emissions reductions and broader circular economy outcomes.

Further work on eco-modulation is being undertaken and will be provided in a final RIS. As proposed, scheme fees may be subject to eco-modulation, impacting different container types differently, glass would likely increase under either a deposit refund or no-deposit scheme, whereas aluminium would likely decrease. In practice this may see more products, such as beer, move to aluminium cans, which is already an observable trend.

Preferred option: A beverage container return scheme (combination of applying a refundable deposit and product stewardship fee)

79. A beverage container return scheme (CRS) is considered a comprehensive option to address the interconnected recycling, litter and embodied emissions issues. Crucially, applying a refundable deposit to beverage containers will incentivise the return of beverage containers for recycling. A CRS provides an additional incentive for people to retain beverage containers for recycling while on the go, thereby preventing litter, and when they are littered, the refundable deposit incentive stays with the container so others will seek to pick them up and recycle any remaining littered containers. The incentive will also encourage recovery of containers of beverages consumed in commercial premises (ie, bars and cafes), with the refundable deposit providing an incentive for such businesses to separate and return the containers for recycling. This incentive is the key feature that sets the CRS option apart from other options.

80. Current council kerbside service costs are largely applied equally to all households that have the service in a district/city. This means whether a household consumes large quantities of beverage containers or not, the household pays the same to recycle an equal share of the total containers captured by the kerbside system. A CRS shifts the volume and costs of recycling beverage containers away from councils and ratepayers, towards the responsible supply chain (ie, manufacturers, retailers and consumers, in particular, those who landfill or litter recyclable beverage containers).

81. CRS improve recycling outcomes for collected materials by providing separated and clean stream (well sorted, food grade only) container collections, as well as ensuring recycling outcomes for containers and improvements in container design through eco-modulation of scheme fees.

82. Collection, processing, and transport infrastructure of a CRS would be complementary to and expand the kerbside collection system, capturing significant additional landfilled, littered and 'away from home' volumes. Key industry stakeholders in New Zealand's processing and manufacturing industry have been calling for a NZ CRS, in order to enable growth in recycle content packaging onshore, leveraging the improved quality and volume of recovered containers, as has happened in other countries.

83. The incentive changes behaviour beyond the primary 'beverage container' related objectives. By introducing a refundable 'value' to the purchase price of a beverage, a CRS encourages consumers and households to rethink how they value waste and the packaging more broadly, for example, the 'stadium effect' may see a broader litter reduction outcome as has been noted in other jurisdictions. A CRS also helps to reduce emissions by reducing the use of virgin materials in container manufacture.

84. CRS are intentionally designed so that most of the costs are ultimately borne by the consumers and producers of beverages. The net costs and benefits of a scheme are largely determined by the key design settings of the scheme. The design options along with the scheme costs and benefits are discussed further in section four. The full CRS cost-benefit analysis can be found in Appendix 2.

85. Public consultation showed strong support for the implementation of a NZ CRS with 92% of submissions in favour (excluding a further 3,996 Kiwi Bottle Drive form submissions in support of a NZ CRS). Feedback noted that a NZ CRS would reduce litter, reduce associated container emissions, change consumer and manufacturer behaviours, and help New Zealand transition to a low-waste, low-emissions, circular economy. Of those very few submitters that did not support the implementation of a NZ CRS, 74% said they would support a scheme if some of the key design settings were different, such as a 10 cent deposit or the exclusion of glass containers).

Section 3: Key scheme design options within a NZ CRS

86. Having established a beverage container return scheme as the preferred policy option, this section of the RIS assesses the specific design settings within a potential scheme for Aotearoa New Zealand.

87. For the purpose of this interim RIS, each of the key design elements of a CRS have been split into individual discussion sections. As this policy is introducing an interconnected system, it is important to note that each option has specific dependencies with other scheme design elements. How each scheme design element interacts with the wider CRS system will determine the extent to which the key policy objectives are met.

88. Set out below are key scheme design elements, which are analysed and developed using a combination of:

    - the PricewaterhouseCoopers (PwC) scheme financial model, which projects the cashflows (revenues and costs) of an operating CRS in Aotearoa New Zealand
    - a cost-benefit analysis (Appendix 2), prepared by consultants Sapere Research Group, which uses the PwC model outputs and models the broader monetised costs and benefits of the proposed scheme (including sensitivity testing of key parameters)
    - modelling assumptions informed by data from operational schemes abroad, expert input and submission feedback
    - recommendations from the co-design process, independent technical advisory group report and key insights or issues from stakeholder engagement.

89. A summary of the proposed key scheme design elements will be compared to the status quo.

90. Additional analysis and commentary on core scheme components (but not key design options) is included throughout this section to provide context and additional information regarding the scheme design options. Additional scheme considerations (such as the scheme financials) are discussed following the discrete options analysis of each scheme design element.

What criteria will be used to evaluate the scheme design options?

91. Evaluation criteria are used to assess how well the options within each scheme design element meet the relevant objectives. Some evaluation criteria are common across scheme design elements, and some are element-specific.

92. As noted above, the overall impact of any CRS design relies on the balance of key scheme design settings, with some key design elements having a greater impact on achieving the overall scheme objectives. Depending on the type of data available, we have included multi-criteria analysis (MCA) tables for some of the scheme design elements and narrative analysis for others.

93. The key policy judgments centre on ensuring a high-performing scheme (ie, recovery, recycling and litter outcomes), whilst balancing potential scheme costs to business and consumers. The criteria outlined below will be used to assess the options within each scheme design element:

    - High recovery of beverage containers – Does the design option enable high (>85%) recovery of beverage containers? Does the design option improve recycling and circular outcomes for beverage container materials?

- Litter reduction – Does the design option reduce the harmful impacts of beverage containers being littered?
- Efficient scheme operation – Is the scheme accessible and easy to use for consumers? Can it be managed easily by scheme operators?
- Fair scheme operation – Will the scheme be even-handed and not unfairly advantage/disadvantage scheme participants?

What scope are scheme design options considered within?

Previous work on the option of a CRS for Aotearoa New Zealand

94. Refer to Section 2 for context on the development of the proposals included in this interim RIS, including the Waste Minimisation Fund (WMF) CRS co-design project.

Evidence-base from a wide range of international examples

95. The WMF-funded CRS co-design project and subsequent Ministry policy development has been informed by the key characteristics and performance data available from over 50 schemes operating globally. All schemes operate with a 'refundable deposit' component to their design, but beyond this core principle, scheme design varies significantly. Accordingly, the combination of scheme design choices can impact a scheme's performance significantly (eg, Germany and the US Massachusetts's schemes have a 98% and 38% beverage container return rate, respectively).

96. The following key design considerations work together to substantially influence the recovery of beverage containers within a CRS:

- the refundable deposit amount (and its relative value as an incentive)
- the network design (convenience, accessibility and degree of retail participation)
- the scheme financial model
- the scheme governance and structural arrangements
- the scope of containers to be included in a scheme.

97. As a CRS impacts a range of stakeholders, effective schemes balance the commercial interests of industry through interconnected design settings (such as the deposit level and network design).

98. For example, a scheme with fewer regulatory controls may require a higher deposit level (to further incentivise the return of containers) and more government involvement in the scheme's managing agency or Product Stewardship Organisation (PSO)[61] function to ensure that recovery targets are met. This is because the more containers a scheme manages, the more the scheme's costs increase. The costs are borne by the beverage industry in the first instance, and this can create a tension between the recovery objectives of the scheme and the industry's desire to reduce costs.

99. Alternatively, a scheme that is well-regulated (such as one that requires retailers to take back used beverage containers and has a sufficiently motivating deposit incentive) may achieve high recovery rates without an excessively high deposit amount and with less government involvement. This is due to the return network being established with a high level of convenience, at locations where consumers already visit to buy beverages, as

[61] The scheme's managing agency is hereafter referred to as the PSO or 'product stewardship organisation'.

the default setting and the risk of (albeit desirable[62]) tensions that exist for beverage industry stakeholders running the scheme are unable to negatively influence the network convenience aspect. The options analysis in this section draws upon international evidence and further data/modelling, where applicable.

Approach of advice to Cabinet

100. In August 2021, Cabinet agreed in principle to progress the development of a NZ CRS, subject to further advice to Cabinet on key design decisions. In September 2021, the Minister for the Environment sought Cabinet direction on key design elements such as the deposit level, the scope of eligible containers, and the return network. Cabinet then approved the preparation of a consultation document on the option of a NZ CRS in line with direction provided on several key design parameters, including:

- a deposit level of NZD 20 cents
- a mixed-model return network (mandatory and voluntary), with feedback sought on the degree of mandatory retail participation (eg, size of retailers that are required to take back containers)
- a deposit financial model
- industry-led governance
    - a broad scope of containers (plastic[63], glass, aluminium, liquid paperboard (LPB)) to be included in a scheme, with the exception of fresh milk, which is proposed to be exempted from a CRS in all container material types.

101. In February 2022, Cabinet approved the release of the *Transforming Recycling* consultation document, including proposals for a NZ CRS, and invited the Minister for the Environment to report back on a NZ CRS before the end of 2022. The *Transforming Recycling* public consultation spanned from 13 March to 22 May 2022, and sought feedback on three inter-related proposals to transform recycling in Aotearoa New Zealand:

- A NZ CRS
- Improvements to household kerbside recycling
- Separation of business food waste

102. The Cabinet direction outlined above, informed by the Ministry's advice, determined the proposals in the consultation document and the options discussed in this interim RIS. The analysis below presents the options considered for each key scheme design element.

Scheme design options informed by stakeholder views

103. The scope of scheme design options for a NZ CRS has been informed in part by stakeholder engagement throughout the CRS policy process as we have built upon the research, recommendations and stakeholder views elucidated from the CRS co-design project.

62 An industry-led scheme is proposed because industry will seek to run the scheme as cost efficiently as possible. While desirable, this same efficiency driver for an industry led scheme is in tension with the scheme performance and recovery rate. The biggest driver of scheme costs is the return rate, every 1% of containers (24 million) is approximately $5 million of deposits and scheme fees in year one and $6 million in year 5 (figures assume 20 cent deposit and exclude GST).

63 Specifically PET, HDPE, PP and recyclable bio-based PET and HDPE.

104. The scheme design options analysis below also integrates feedback from the *Transforming Recycling* consultation, and further feedback from stakeholder engagement with the Minister for the Environment and Ministry officials, after the completion of the CRS co-design process in 2020. These meetings broadly reinforced support for a NZ CRS and reflected divergent views on key design considerations that emerged from the co-design process. Ministry officials have also met with various stakeholders to discuss matters relating to the option of a NZ CRS before and after public consultation.

105. Table 4 presents an overview of broad stakeholder feedback on the option of a NZ CRS to date. Specific stakeholder feedback is integrated as applicable in the subsequent scheme design analysis sections.

106. Public consultation sought broader public feedback on the implementation of and the design proposals for a CRS as well as specific feedback from key stakeholders on the proposed design settings.

Table 4: Overview of stakeholder feedback (public consultation and other communications) on the option of a NZ CRS

Stakeholder group	Feedback to date on the option of a NZ CRS (public consultation and otherwise)
General public	Public consultation showed 92% support for the implementation of a NZ CRS (excluding a further 3996 form submissions in support of scheme implementation).
Local government	Largely supports an effective and convenient scheme that shifts costs for recycling beverage containers from councils and ratepayers to the consumers and producers of beverage containers.
Iwi/ hapū/ Māori	Broad support for a NZ CRS as it aligns with Māori worldviews on waste. Key comments were regarding scheme accessibility for rural and low-income communities, ensuring opportunities for iwi/hapū/whānau involvement in the scheme, and including Māori representation in the governing body of the scheme to ensure its implementation and development in alignment with tea o Māori and Te Tiriti.
Large beverage producers (non-alcohol)	Largely support the implementation an industry-led scheme with a 10 cent deposit and based on the predominantly depot network model of Queensland and Western Australia.
Large beverage producers (alcohol)	Industry groups largely opposed to inclusion of glass in a NZ CRS. Industry lobby and voluntary scheme operator, the Glass Packaging Forum, has, subsequent to consultation, tabled its proposal for an alternative glass-only scheme with no refundable deposit incentive. In November 2022, New Zealand's largest alcohol beverage producer, Lion, has communicated its position as supporting the NZ CRS (conditionally, and in-line with large non-alcohol producers).
Commercial recyclers (collectors and processors)	Mixed support for the NZ CRS, generally in favour of an 'all materials/products included' scheme as recycling issues go beyond beverage containers. Concerns regarding impacts on existing services/facilities and advocate that the 'unclaimed deposit' value placed in kerbside be allocated to offset the loss of scheme material revenues from their existing recycling activities.
Community groups and NGOs	Overall support for CRS NGOs support an ambitious, convenient scheme that is a 'mixed-return model' with some mandated retailer-take back options while also providing opportunities for community participation through the operation of return point depots (voluntary participation).
Small to medium beverage producers	Some smaller beverage producers, including some breweries, are strongly in support of the proposed NZ CRS. Other small to medium beverage producers' views are reflected in industry body submissions, such as the two large beverage producer categories above.
Retailers and supermarkets	Support a CRS in principle, concerns regarding cost and requirements for return points and likely to oppose any mandatory take-back requirements, eg, costs associated with establishing take-back facilities on site.

What scheme design options are being considered?

107. The key scheme design elements (and their respective design options) considered in this interim RIS are outlined in table 5 below. Further analysis on the return network design settings and implementation, and options for scheme governance will be provided in the full RIS attached to the final Cabinet paper in the first quarter of 2023, following further modelling and analysis.

Table 5: Scheme design elements and options/considerations

Key scheme design element	Options considered
Refundable deposit level[64]	• NZD 10 cents • NZD 20 cents • NZD 30 cents
Return network design (further detail to be provided in final RIS)	• mandatory return-to-retail • procurement-led – voluntary participation • mixed-return model
Scope of containers Overarching eligibility criteria and requirements: • definitions • container size • obligations for retailers and importers.	• include a broad scope of container materials • exempt one or more container material types, eg: - glass in - glass out • include all beverage product or packaging types • exempt one or more beverage product or packaging types: - exempt fresh milk in all packaging types - exempt beverage containers that are intended for refilling and have an established return/refillables scheme
Scheme financial model	• deposit model • refund model
Scheme governance (further detail to be provided in final RIS)	• industry-led • alternatives to industry-led, eg, split
Additional scheme considerations (not options considered)	• scheme financials • legislative implications

108. For the purpose of this interim RIS, each of the key design elements of a CRS have been split into individual discussion sections. As this policy is introducing an interconnected system, it is important to note that each option has specific dependencies with other scheme design elements. How each scheme design element interacts with the wider CRS system, will determine the extent to which consumer and business behaviours are incentivised and the key policy objectives are met.

Key scheme design element one – Refundable deposit level

Consultation proposed that a NZ CRS would use a NZD 20 cent refundable deposit, applied to all eligible containers within the scheme.

109. In a CRS, beverage containers approved to be part of the scheme are required to have a refundable deposit to incentivise consumers to return used containers to a designated scheme drop-off point for a refund. The refundable deposit is added to the normal price of the beverage. Some schemes internationally apply different deposit levels to different

64 Deposit amounts that include 5 cents were previously considered, but have been withdrawn as while the amount is payable electronically, a cash refund with legal tender in New Zealand would not allow for this amount.

types of beverage containers (eg, by container size, material type or, in some cases, whether the product is an alcoholic or non-alcoholic beverage).

110. When the empty drink container is returned to a designated collection point, the consumer gets their deposit refunded. Deposit refunds can be provided in many different ways,[65] including:

- cash
- electronic funds transfer
- supermarket vouchers (for cash or credit)
- optional donation to charity.

111. Pending how the return network is designed, the refundable deposit can enable and incentivise community groups (such as sports clubs and schools) to run litter clean ups and charity drives for containers. This can deliver financial benefits to these organisations.

112. The OECD notes that a deposit level should be high enough to incentivise consumers to put in the extra effort to return their used beverage containers and encourage litter avoidance and collection.[66]

Relevant objectives

113. If set right, the deposit level is one of the main drivers for achieving the key policy objectives by:
- incentivising the return (or recovery) of beverage containers. This will increase circularity of beverage containers, resulting in reduced litter, improved recycling outcomes and reduced emissions
- shifting the costs of resource recovery to the producers and consumers of beverage containers. If a beverage container is not returned to the scheme, both the consumer (and the producer, under the deposit financial model) bear the cost of the deposit
- opportunities for community participation in the scheme, such as direct participation by social enterprises in the network operating a depot, fundraising for charities via reverse evening machines and any community group or individual may collect littered containers and assuming they are eligible, return them for a cash refund.

The deposit level has a strong influence on the scheme's return rate

114. The primary objective of the deposit level is to set the right refundable deposit price to incentivise consumers to return their beverage container through the scheme for recycling or reuse.

115. Modelling and regression analysis based on international scheme deposit levels, median income and return rates suggests a strong relationship between the deposit level and recovery rates, and that the deposit level has the greatest impact on returns.

116. Regression analysis and international data show a NZD 20 cent deposit (US 12 cents) is more likely achieve an 85% recovery rate (black bars in figure 3 below), a NZD 30 cent deposit (US 18 cents) is likely to exceed an 85% recovery rate (yellow bars below), a

65 2020 Consumer NZ research on container return schemes found that most people (40%) would prefer to receive a refund in cash, followed by direct payment to their bank account (21%).

66 Organisation for Economic Co-operation and Development (OECD), 2015. Creating Incentives for Greener Products: A Policy Manual for Eastern Partnership Countries.

NZD 10 cent deposit (US 6 cents) is less likely to achieve an 85% recovery rate (green bars below).

Figure 3: Updated (Reloop, 2022) reported return rates for international schemes by minimum deposit value in USD

117. Australian schemes (red box in figure 3) operate with a 10 cent deposit (NZD 11 cents) and currently on average achieve a 65% recovery rate.[67] s 6(b), s 9(2)(ba)(i)

[redacted]

67 65% is based on latest Australian data, not reflected in Figure 3, which includes: 76% for SA, 72% NT, 67% NSW, 50% ACT, 62% Queensland, 60% WA. Source: pers. com with Australian officials regarding updated information on Australian schemes – NB this updated data does not change average recovery performance.

Additional variables that intersect with deposit level

Core scheme component – return rate targets

Many overseas schemes include targets in their legislation to help drive the recovery of eligible beverage containers and hold the scheme's PSO to account. Some schemes include penalties if targets are not met. Overseas schemes use a variety of penalties including:

- giving Ministerial direction with extended deadlines to meet the existing targets
- issuing a compliance notice, fines, and penalties
- suspending or cancelling the appointment of the PSO
- reviewing/increasing the deposit amount if targets are not met
- increasing the number of return points if targets are not met.

The *Transforming Recycling* consultation document proposed that the NZ CRS will target an 85% recovery of eligible containers by year three of scheme implementation and a 90% recovery by year five. If either of these targets are not met, or maintained, it was proposed that government would review the deposit level and consider increasing this amount, in addition to reviewing the regulated component of the return network.

Consultation feedback on return targets
Most submitters (85%), including individuals, local government, and NGOs, supported proposed targets and their timelines. Some of these submitters highlighted that having ambitious or aspirational targets would be necessary to make significant progress towards positive behaviour change and a circular economy. Some submitters, such as industry associations and some businesses, did not agree with the return targets. These submitters generally supported having targets in place but did not think the proposed recovery rates and timelines were feasible.

Recommendation for return targets
Mandatory return targets of 85% from year 3 and 90% from year 5 of the scheme onwards is consistent with international best practice and will be fundamental in assisting the NZ CRS to achieve high recovery rates and meeting its policy objectives.

118. The convenience and accessibility level of scheme depends on a number of factors, including return point frequency (how many per population), where they are located (are the located in places consumers normally visit), is the site automated or manual counting (speed of the service) and what hours are they open.

119. In addition to higher deposit levels and return rates, high-performing European scheme networks are typically characterised by their relative convenience, which is usually established through retailer take-back obligations that generate an average convenience level of one return point per 1,904 people (average across 13 countries, ranging from 1:360 to 1:2,730).

120. Comparatively, Australian schemes have return networks established through procurement models, that are typically more depot-based and with an average convenience level of one return point per 14,826 people (average across 6 states, ranging from 1:11,729 to 1:19,650).

Options considered for the refundable deposit level

121. The options considered for the proposed CRS design, as outlined in the consultation document, include:
    - NZD 10 cents
    - NZD 20 cents
    - NZD 30 cents.

122. A range of deposit levels including NZD 10, 20, and 30 cents have been considered for an NZ CRS. As outlined in table 6 below, a higher deposit level (30 cents or more), while likely to achieve very high recovery and very low litter rates, would also see more significant cost increases for consumers and is not considered a viable an option for a NZ CRS. At the other end of the spectrum, a 10 cent deposit (see figure 3 above, US 6 cents) would place an NZ CRS amongst the lowest deposit levels for schemes globally.

123. Table 6 below is based on the PwC regression analysis of 37 schemes. The 20 cents 90% target scenario goes beyond what the regression analysis indicates would be likely in terms of return rate but may still be achieved at a 20 cents deposit rate if the PSO is sufficiently motivated to achieve the target.

Table 6: Refundable deposit level options analysis

	Refundable deposit level options considered Modelling assumes 'milk-out' and total in-scope beverage containers to market in the first year a CRS is implemented as 2.27 billion containers, including a one-off reduction in sales of 6.5 % in year 1. Year 5 is estimated at 2.36 billion. Modelling is based on performance data from 37 schemes.			
Criteria **Comments/interpretation of criteria for this option**	NZD 10 cents	NZD 20 cents	NZ 20 cents (at 90% target; new PwC base case for costs – see 'scheme financial' section)	NZD 30 cents
Recovery of beverage containers Does the design option enable high recovery of beverage containers?	Scheme commencement: 70% return rate (1.6 billion containers) After 5 years: 78% return rate, 1.84 billion containers	Scheme commencement: 76% return rate (1.72 billion containers) After 5 years: 84% return rate, 1.98 billion containers	Scheme commencement: 76% return rate (1.72 billion containers) After 5 years: 90% return rate, 2.15 billion containers	Scheme commencement: 81% return rate (1.87 billion containers) After 5 years: 90% return rate, 2.15 billion containers
Litter reduction Does the design option reduce the harmful impacts of beverage containers being littered? *Strongly correlated to recovery*	Containers to landfill and litter: Year 1: 677 million Year 5: 518 million	Containers to landfill and litter: Year 1: 556 million Year 5: 379 million	Containers to landfill and litter: Year 1: 556 million Year 5: 235 million	Containers to landfill and litter: Year 1: 424 million Year 5: 235 million
Efficient scheme operation Does the design option enable an efficient and easy-to-use scheme?	Yes. However, a proportion of consumers will not be sufficiently incentivised to change their behaviour at 10 cents	Yes. However, a smaller proportion (than 10 at cents) of consumers will not be sufficiently incentivised to change their behaviour at 20 cents	Yes. Based on a mandatory 90% target, this option presents a wider range of potential benefits and costs	Yes. However, even at 30 cents a small proportion of consumers will not be incentivised to change their behaviour
'Fair' scheme operation Does the option enable the scheme to be even handed and not unfairly advantage/ disadvantage scheme participants? *Net cost to participating households*	A CRS with a 10c deposit would increase the face value price of most beverage products by 15-16c including GST For the average participating household, this would see an annual scheme cost of $194-$203 including GST. Less $129 in 10 cent deposit refunds. **Net scheme fee cost $66 - $75 per year** (including GST), **or $1.27- $1.44 per week**	A CRS with a 20c deposit would increase the face value price of most beverage products by 24-25c including GST For the average participating household, this would see an annual scheme cost of $312-$328 including GST Less $257 in 20 cent deposit refunds. **Net scheme fee cost $55 - $71 per year** (including GST), **or $1.06 - $1.36 per week**	A CRS with a 20c deposit would increase the face value price of most beverage products by 24-28c including GST For the average participating household, this would see an annual scheme cost of $313 - $350 including GST Less $257 in 20 cent deposit refunds. **Net scheme fee cost $56 - $93 per year** (including GST), **or $1.07 - $1.79 per week**	A CRS with a 30c deposit would increase the face value price of most beverage products by 30-32c including GST For the average participating household, this would see an annual scheme cost of $444 - $468 including GST Less $386 in 30 cent deposit refunds. **Net scheme fee cost $58 - $83 per year** (including GST), **or $1.12 - $1.60 per week**

IMPORTANT: The above costs are presented as ranges. The ranges represent year 1 and year 5 estimated costs and assume 100% pass through of scheme costs to households. Evidence suggests 100% pass through does not always occur. The assumed 6.5% reduction in sales only applies to container sales volume. **The savings from the reduction in sales is not included as an offset against the estimated household scheme related costs in this table, as data to support analysis is very limited, a conservative scenario is presented. Savings from a reduction in consumption that includes the whole purchase price may either somewhat or entirely offset household scheme related costs** through buying fewer beverage containers, such as was observed following establishment of the Queensland scheme, which **resulted in a net cost increase to households of only 93 cents per month** for non-alcoholic beverages, following an estimated 6.5% reduction in volume consumption (equivalent to 1.04 litres per month).

The 10 cent deposit option

124. Table 6 above highlights that regression analysis suggests a 10 cent deposit level (USD 6 cents) would likely see a lower recovery rate, approximately 78% of beverage containers after 5 years of scheme operation. For context however, the median return rate for international schemes with deposit levels less than US 7 cents is 68%.

125. Based on the proposed container return scheme's scope, and a 2026 commencement date, we estimate that if achieved, a 78% recovery rate would continue to see approximately 518 million eligible containers ending up as litter or landfill every year. If a 10 cent deposit were to only achieve the median for schemes with deposits under 7 US cents, 754 million containers would continue to go to landfill or litter every year.

126. The 10 cent option would however significantly reduce the face value increase on beverage containers from 24-28 cents (including GST) to 15-16 cents (including GST). However, for households who recycle, the net cost in year one is actually higher under the 10 cent scenario than for all other deposit level scenarios.

127. There is no comparable scheme in the world that achieves a 90% target, it is unlikely that a New Zealand 10 cent deposit would achieve this level of recovery, s 6(b), s 9(2)(ba)(i)

Submitter feedback on the proposed 20 cent deposit level

128. Submissions demonstrated high levels of support (88%) for the proposed NZD 20 cent deposit level. Many submitters noted that 20 cents strikes the right balance between the incentive to recycle and costs. A few submitters also suggested the deposit level be higher (eg, NZD 30, 40 or 50 cents). In addition to most individual submitters, key stakeholders/organisations in support of a NZD 20 cent deposit included councils, the WasteMINZ Sector Groups, the NZ Product Stewardship Council, Eco Central, ReGroup, TOMRA, SaveBOARD, and some small-medium businesses.

129. While typically conditionally supportive of a CRS in general, several industry bodies, big beverage (Coca-Cola, Frucor Suntory, Lion, DB, Asahi, etc) and large retail (Foodstuffs and Woolworths) submitters indicated a strong preference for a 10 cent deposit and that the refundable deposit be GST inclusive[68] (consistent with Australia). These submitters were concerned about the proposed scheme costs, scheme fees, NZD 20 cent deposit level, mandated take-back requirements for retailers and the treatment of GST.

130. Those opposed to the 20 cent refund amount also noted it would increase the cost of living and disproportionately impact low-income groups. We note this feedback was not reported from any other respondent types, many councils, individuals, and community groups supported the 20 cent refund amount.

Preferred option summary: NZD 20 cent refundable deposit level

131. On the basis of the analysis included in table 6 (above), the Ministry's preferred option is that a NZ CRS would apply a deposit level of NZD 20 cents to all eligible beverage containers. A 20 cent refundable deposit included in the price of beverages sold in bottles, cans and liquid paper board containers would provide a strong incentive for consumers to

68 Inland Revenue Department (IRD) has noted that GST will apply to the increased price of scheme containers. Households that return their containers will not pay any extra GST under the scheme (all other things being equal), because the proposed refundable deposit amount (20cents) is GST inclusive. GST registered taxpayers will be able to claim a deduction of the additional GST cost in the normal way, provided the costs of the scheme containers are incurred in making taxable supplies.

return approximately (at least) 2 billion containers for recycling after five years of scheme operation, while simultaneously significantly reducing the proportion of containers being landfilled and littered.

132. The benefits of a 20 cent deposit level are that it:

- creates a stronger incentive to return the container for the refund
- while the face value costs are higher, the net cost to households who recycle is lower in year one (as compared to 10 cents)
- is more likely to achieve a higher return rate, 84% based on modelling that averages 37 schemes, potentially higher when combined with other scheme design characteristics such as a 90% target and aligning more towards those schemes with higher levels of convenience (i.e. more like European schemes)
- is more likely to significantly reduce beverage container litter – as, in addition to recycling incentives that would see far fewer containers available to be littered, a container worth 20 cents that has been littered is more likely to be picked up and recycled
- strikes a balance between ensuring an effective scheme with managing increased costs to consumers.

133. A NZD 20 cent deposit level is expected to achieve a recovery rate of 84% based on PwC regression analysis. As the broader design is targeted toward higher performing schemes, depending on other design elements – such as the level of mandated take-back for retailers (see CRS design element in key scheme design element three, 'return network' below).

134. The scheme's proposed target has been set higher (85% for year three and 90% for year five). Should the scheme not meet these targets, it is proposed the scheme be reviewed, and the deposit level and retailer take back requirements be reconsidered toward increasing recovery to meet these targets.

Key scheme design element two – Return network

Consultation proposed that the NZ CRS return network would use a 'mixed-return model' to ensure convenient return points for eligible containers. A mixed-return model would:

- use regulations to mandate certain retailers (eg, those over a certain floor size) to take back eligible beverage containers and provide a refund to consumers
- provide exemptions for retailers on reasonable grounds such as relating to health and safety and proximity to other return points.

Core scheme component – container return point types

Reverse vending machines (RVMs) – an automated vending machine that accepts empty containers (up to 100 per minute in standard models) using technology to accurately verify, count and sort containers by material type, then provide a refund or donation option. RVMs are typically set up outside or in the entrance of retail locations and can be sized for low, medium and high-volume sites

Depots (manual or automated) – eligible containers are brought to a depot and counted onsite, either manually (by staff) or using automated counting, verification and sorting technology before a refund is given. Depots are generally managed by interested stakeholders such as entrepreneurs, community groups, charities and waste operators (eg, scrap metal operators). In particular, depots cater to large private and commercial-scale customers such as collections from charity drives, hotels, bars and restaurants.

Over-the-counter returns – small volumes of containers are received/redeemed by small businesses (eg, dairies) and are then on-shipped to a depot for verification and aggregation.

RVM | Depot | Over-the-counter

135. A container return point is where consumers and businesses can return eligible beverage containers to redeem their container to receive the deposit refund. Each return point type is developed to suit certain situations, container volumes and customers. Typically, eligible containers can be returned to any participating return point for a refund; it does not have to be the same place the beverage was purchased.

136. The main return network for a CRS is only established once. While the number and location of return points can change over time, the core system's effectiveness and carbon footprint are all largely locked in at the implementation stage. An efficient, convenient, low-carbon network is one where most people can return containers to places they frequent regularly, and that can be well managed as a refund redemption site.

Relevant objectives

137. If established properly, the return network contributes towards the key policy objectives as follows:
    - the return network enables the return (or recovery) of beverage containers. The easier and more convenient it is for people to return their containers, the more containers are likely to be returned and recovered through the scheme. This will increase circularity of beverage containers, resulting in reduced litter, improved recycling outcomes and reduced emissions
    - how a return network is designed impacts how accessible the scheme is for all consumers, in both rural and urban settings.

The return network influences the scheme's return rate and how equitable the scheme is for consumers and retailers

138. The main objective of the return network design is to ensure an efficient and convenient scheme that enables high scheme participation for the majority of New Zealand's resident and visitor population.

139. A return point's accessibility and customer convenience (eg, hours of operation, location and travel distance) is critical to the scheme's overall effectiveness and efficiency. The location, number and type of return point locations per head of population impact operational scheme costs, customer convenience, public engagement in the scheme and the network's embedded carbon footprint.

140. Return point operators receive a per container handling fee to cover the reasonable costs of operating their return point. Handling fees vary by return point type are modelled at 6.65 – 7.61 cents per container in year one, increasing to 7.19 - 8.24 cents per container by year 5. The actual handling fee would be determined by the market-driven costs of the scheme (see 'scheme fees' in scheme financials section, below).

Options considered for the scheme's return network

141. Container return schemes use a range of legislative and non-legislative tools to create the return network for a scheme. The most common approaches are:
    - legislation/regulations obligate retailers that sell beverages to take back eligible beverage containers (mandatory return-to-retail)
    - either the PSO or government procure the network, the approach relies on the profitability aspect to incentivise potential operators to participate in the scheme, these schemes are typically depot based (voluntary participation)
    - a mixed model approach using both mandatory return requirements and procurement (voluntary participation).

142. An overview of the return model options is provided in table 7, with more detail and analysis on each option provided below.

Table 7: Return network options

Return model	Description
Mandatory return-to-retail (regulatory approach)	• requires retailers to take back used beverage containers • guarantees conveniently located return points for majority of the population • higher return rates typically achieved • would apply to certain type or size of retailer (larger stores in urban settings) • retailers may face initial costs to establish return points on their premises (direct purchase or lease)

	• costs recovered through handling fees • consumer transport emissions typically lower as return points leverage existing trips to retailers • many schemes globally use 'return-to-retail' legislation to some degree (common in EU, US, Canada)
Voluntary participation (procurement led approach)	• relies on incentivising potential return point operators (including retailers) to engage in network procurement process being run by the scheme manager or government • typically results in a depot centric scheme, often located in less convenient locations • typically fewer and more new trips – encourages hoarding of containers to make the 'additional trip' worthwhile • hoarding can result in longer wait times at return points • overall limited network accessibility, efficiency and effectiveness
Mixed-return model (combination approach)	• uses both mandatory and voluntary return frameworks • retailers (eg, by type or size) that sell beverages for away from home consumption would be required to take back eligible containers and provide a refund to consumers • other organisations (retailers, community groups, businesses) could voluntarily engage in the network through the PSO's procurement process, via depots • depending on the deposit incentive and degree of retail take back, mixed models can have mixed results

Mandatory return-to-retail

143. Most schemes overseas use legislation or regulations to require certain retailers that sell beverages to take back empty containers and provide the refund. This ensures that consumers are guaranteed convenient return points at locations such as supermarkets, dairies, bottle shops and petrol stations. This approach is common to European schemes and is also used to some degree in the United States and Canada, but not in Australia.

144. For example, in Lithuania, all retailers that sell beverages, with a shop floor size of over 300m2, are required to take back containers. For rural retailers that sells beverages, the requirement applies to stores over 60m², to capture smaller stores like dairies (eg, in the absence of large supermarkets). In Germany, all retailers that sell beverages, whose stores are over 200m², are mandated to take back containers.

145. Higher return rates are typically observed in mandatory return-to-retail schemes because of the high convenience that retail return point locations such as supermarkets provide to consumers. For example, Lithuania (NZD 17 cent deposit) and Germany (NZD 42 cent deposit) recover approximately 92% and 98% of beverage containers, respectively, despite having very different deposit levels.

146. Depending on the scheme design, mandatory return-to-retail legislation typically only applies to those retailers who sell beverages (eg, supermarkets and other retailers that sell beverages). Internationally, mandatory return-to-retail requirements have been done in a number of different ways, including:

- all retailers (of any type) that sell beverages mandated to take beverage containers back
- all retailers above a certain size (eg, shop floor area in m² or an annual turnover threshold) that sell beverages must take beverage containers back. Different size thresholds can also be applied for urban and rural communities
- all retailers from a certain retail format (eg, only supermarkets) that sell beverages must take beverage containers back.

147. There are also options to provide exemptions for retailers (ie, they would not be subject to mandatory return-to-retail requirements). Exemptions can include: limiting take-back requirements only to beverage packaging types that retailers sell (and in some cases this is further narrowed to only brands that they sell); limiting take back container numbers per customer (eg, 24 bottles/cans in small retail settings); for health and safety, or food safety reasons; or where there is another return point nearby.

148. Mandatory return-to-retail legislation for a NZ CRS could:
    - only apply to larger retailers or supermarkets (such as those exceeding a specific floor area, which could differ for urban and rural communities)[69]
    - exclude small retail stores such as convenience stores and dairies unless they wish to participate and are responding to a procurement process seeking return point operators in that geographic area
    - provide conditions and/or exemptions for retailers (eg, for health and safety, or food safety reasons; or where there is another return point in close proximity, eg, within 500 metres).

149. Requiring retailers to take back eligible containers would mean that mandated retailers may face initial costs to establish return points on their premises (such as RVMs). This could be done through direct purchase and management of store-owned return systems, or through the procurement (lease) of a return-point provider, and technology to establish and manage return points.

150. Under a mandatory return-to-retail model, options for retailers are influenced by a number of factors including the regulatory requirements of the scheme (such as the need for fraud protection, digital verification of containers and data reporting), the return on investment associated with different infrastructure ownership models and other important considerations such as the desired level of customer service/experience (ie, good sites draw in new customers).

Voluntary participation (non-regulatory, procurement led approach, typically depot based)

151. Schemes without mandatory return-to-retail regulations rely on existing and new businesses voluntarily choosing to establish a return point in the market. The viability and convenience of depot sites largely rely on their cost structure, which is often driven by handling fee revenues and operational costs (including the venue lease cost). The business opportunity of generating revenue through handling fees encourages operators to enter the return-point (usually depot) market and participate in network procurement processes.

152. While the voluntary return-to-retail model has some merits, if base levels of convenience are established through procurement, the network is likely to be less convenient for consumers. Sites are also more likely to be located in less accessible locations, such as commercial/industrial parks where land and buildings are cheaper. This model often leads to lower (less than 85%) return rates and would increase vehicle movements (and associated emissions) because many more consumers have to travel farther and to sites they normally would not visit to return their beverage containers.

Geospatial analysis for a New Zealand network

69 The number of retailers to achieve optimal coverage in the network has been modelled on 679 supermarkets.

153. Initial geo-spatial analysis used 679 urban and rural supermarkets across Aotearoa New Zealand as an example, with Countdown, Four Square, Fresh Choice, New World, Pak'n Save and Super Value stores selected. It is estimated that New Zealand supermarkets alone sold about 1.38 billion beverage containers in 2019/20 (57% of the beverage container market) and 1.41 billion in 2020/21 (54% of the market).[70] This modelling has shown that on average:

- 80% of New Zealanders live within a 5-minute drive of a supermarket
- 90% live within a 10-minute drive
- over 95% live within a 20-minute drive.

154. Approximately 89% of New Zealanders live within 5 kilometres of a supermarket, and 95% live within 10 kilometres of a supermarket. This suggests that if regulations required retailers such as supermarkets to take back empty beverage containers, the majority of New Zealand's population would have accessible, convenient return points for containers.

155. Further geospatial analysis on the various scenarios and potential return point locations (for example, beyond just major supermarkets) is being undertaken to inform future Cabinet decisions on regulatory settings for the NZ CRS return network, results from this modelling will be available February/March 2023.

Submitter feedback on return network

156. Public consultation sought feedback on the degree of mandatory retail participation, in particular what size and type of retailer should be required to take back beverage containers.

157. There was 86% support for the proposed 'mixed model' return network. Key feedback from large beverage producers and large retailers included opposition to a regulated network, largely on the basis of costs and that it was not necessary to regulate for retail participation, and that retailers would participate on a voluntary basis.

158. There is little evidence to suggest that voluntary retail participation would result in a level of convenience aligned with regulated retail take back schemes. Western Australia is the latest network established in Australia where voluntary participation by retailers is enabled, but not regulated, resultantly, very little retail take back exists. .

159. Where depots dominate networks, there are a number key issues that arise, including that:

- they can cost more to operate and
- they are not open for the same hours as retailers reducing accessibility
- they are less conveniently located, often in industrial/commercial zones that consumers do not regularly visit, as they are necessarily designed for receiving bulk commercial volumes
- inconvenient locations mean new trips which increases the emissions footprint of the scheme associated with consumer transport
- inconvenience can also encourage stockpiling behaviour by households which in turn, can slow down the transaction time for redemption when consumers do

70 GS1 New Zealand beverage sales data, 2022.

visit depots; and the latter can be a barrier to participation (as evidenced by recent Australian research).

160. While these potential issues exist for regular consumers, depots do serve a very important function and purpose in the network, servicing commercial volumes and where appropriate, verifying and containers from other manual return points.

161. The consultation proposal was for a ‘mixed-return’ model. In a mixed-return model, the majority of return points would be established through regulations at retail locations (typically larger supermarkets), while the scheme’s PSO would procure additional voluntary return points, including depots.

162. Further geo-spatial modelling work is underway on the NZ CRS return network and further recommendations and analysis on the return network will be included in a final CRS RIS.

Table 8: Return network options analysis

	International return network types considered		
Criteria **Comments/interpretation of criteria for this option**	**Mandatory return-to-retail network (regulatory approach to network establishment)** Requires retailers who sell beverages to take back used/empty containers May apply to specific type/size/subset of retailers who sell beverages	**Voluntary network (non-regulatory, procurement led approach to network establishment, typically depot based)** Relies on incentivising potential return point operators to engage in network procurement process being run by the scheme PSO	**Mixed-return network (regulation with many exemptions and in some cases, mixed with a procurement led approach to establishing network eg, depots)** Requires retailer take back and often includes broad exemptions for retailers (typically incentivises retailers to establish a smaller number of depots)
Recovery of beverage containers Does the design option enable high recovery of beverage containers?	Return-to-retail schemes (irrespective of deposit level) are typically highly convenient and often achieve over 85% recovery (averaging 90%) European schemes have convenience levels (return points to population) ranging from 1:360 to 1:2,730, with an average of 1:1,904. Return points are also often open longer hours (supermarket hours), which also increases accessibility in evenings and weekends for consumers	Depot based schemes (irrespective of deposit level) do not typically achieve or exceed 85% recovery (averaging 65% in Australia and 74% in Canada) Depot-based schemes have lower convenience levels (return points to population) ranging from 1:11,729 to 1:19,650, with an average of 1:9,896 in Canada; and from 1:1,025 to 1:19,290, with an average of 1:14,826 in Australia. Return points can be located in more convenient shopping areas in procurement led schemes, but are more likely to be based on a drive through model and in an industrial site where land is cheaper	Mixed-return model schemes (irrespective of deposit level) are highly variable in design with respect to how the model works and levels of convenience for consumers, and they do not typically achieve or exceed 85% recovery. One such exemption clause common to US schemes is that retailers only have to take back the product types they sell. This means that while take back obligation settings may have the appearance of convenience, for many products, the actual convenience level is much lower.
Litter reduction Does the design option reduce the harmful impacts of beverage containers being littered? *Strongly correlated to recovery*	Highly convenient return-to-retail schemes are the best performing schemes in the world, averaging 90% recovery. Therefore, they have fewer containers available to litter and disposal	Lower performing scheme network types have more containers available to litter and disposal, however this can be offset (to some degree) with a higher deposit that incentivises more recovery	Lower performing scheme network types have more containers available to litter and disposal, however this can be offset (to some degree) with a higher deposit that incentivises more recovery. The proposal is to design a 'mixed-return' model with a higher level of convenience and with no product specific exemptions that create lower levels of convenience within the network, thereby reducing litter rates.
Efficient scheme operation Does the design option enable an efficient and easy-to-use scheme?	Return-to-retail model is highly efficient and guarantees conveniently located return points for the majority (~95%) of New Zealand's population	The depot model is less efficient from a consumer perspective as the procurement led approach usually results in fewer return points	Mixed-return network guarantees some conveniently located return points for the majority of New Zealand's population, however, this model is typically implemented with broad exemptions,

	International return network types considered		
	based on the major supermarket brands stores alone. As beverages are returned where they are purchased, the scheme generates relatively few new trips, minimising the return point network carbon footprint. A return-to-retail only model is less efficient for returning commercial recovery volumes	Fewer return points per population leads to fewer containers returned, which reduces scheme costs for the beverage industry Depots are typically very well suited (efficient) to servicing bulk commercial customers, eg, collections/drop offs from the hospitality industry A depot only model also creates many more new trips due to drop off locations in more remote (industrial) sites, which increases the carbon footprint of the network	which reduces convenience levels to those similar to depot only schemes The efficiency of a mixed-return model will largely depend upon the level of convenience that is established by the regulated take back requirements of the network. Typically, these favour lower levels of convenience, but do not have to. The proposal is to design a 'mixed-return' model with a higher level of convenience, such as would be the case if all New Zealand supermarkets were required to take back containers.
'Fair' scheme operation Does the option enable the scheme to be even handed and not unfairly advantage/ disadvantage scheme participants? *Cost-benefit considerations*	Retailers may face initial costs to establish return points on their premises (direct purchase or lease), however, the costs are reimbursed via a per-container handling fee As schemes are self-funding, costs are largely borne by the producers, retailers and consumers of beverages A fair scheme for consumers is one where it is easy to get their refundable deposits back	Depot based schemes typically have fewer return points per population Depots are often located in less convenient locations, making it harder for consumers to get their deposits back Depot only schemes provide an increased number of opportunities for third parties to be involved in (and profit from) the network A fair scheme for the beverage industry is one that minimises costs – fewer return points would typically reduce scheme operating costs	Mixed-return model requires some retailers that sell beverages be required to take them back A mixed-return model allows for some third party organisations (iwi/hapū, retailers, community groups, charities, businesses) to voluntarily engage in the network through the PSO's procurement process for depots and any over the counter sites A mixed-return model with high levels of convenience for consumers, that does not require all retailers to take back beverages, provides a fair approach to balancing the scheme network design

Preferred option summary: a highly convenient 'mixed-return' network model

163. Based on the analysis set out in table 8 (above), the preferred option is that a NZ CRS return network would use both regulated take back for retailers to establish a base level of higher convenience return points, and a procurement-led approach to establishing depots and other return points, such as over the counter sites to create a 'mixed-return' model, with a higher level of convenience eg, 1 return point per 5,000–7,500 people (ie, the range modelled to achieve an 84% return rate at NZD 20 cents deposit).

164. The mixed model retail take back obligation settings are subject to a more detailed network study and would be established in regulations in any case.

165. Evidence shows that convenient schemes with mandated take-back for retailers are a key design consideration to drive the recovery of eligible beverage containers. However, unlike some European schemes, we do not consider that all New Zealand retailers need to act as container return facilities.

166. If New Zealand's network was made up of 795 sites – including 645 RVM sites (such as at major brand supermarkets), 50 depots and a number (100) of over-the-counter sites to fill gaps and service remote rural areas that do not have access to a major brand supermarket – the concentration of return facilities would be 1:6,623. This ratio would ensure a convenient scheme for consumers (urban and rural), as well as providing depot services for commercial volumes from the hospitality sector.

167. A 'mixed-return' model provides opportunities for businesses, community organisations and charities to participate in a scheme. In a mixed-return model, the majority of return points would be established through regulations at retail locations (supermarkets), while the scheme's PSO would procure additional voluntary return points, including depots.

168. Supermarkets could play a greater role in being responsible for the products that they sell (eg, through mandatory return-to-retail), as they are the largest sales channel for beverage container sales in New Zealand and are already in locations convenient to 95% of New Zealanders.[71]

169. The PSO would procure and approve additional voluntary return points, including depots, and the business case for the depots would need to enable them to be viable operations. As depots target commercial volumes, while there may be fewer of them, they would still be expected to manage significant volumes on a site-by-site basis. However, they would more likely be located in less convenient locations for consumers, such as industrial zones.

170. Further geospatial analysis on the various scenarios and potential return point locations (for example, beyond just major supermarkets) will be undertaken to inform future Cabinet decisions on which legislative and regulatory settings are appropriate for a NZ CRS return network. This analysis will be included in a final CRS RIS and may involve further engagement with network participants.

[71] Based on Ministry geo-spatial modelling. A 2020 Consumer NZ survey found 70% of respondents noted that supermarkets would provide the most convenient place to return scheme eligible containers in New Zealand.

Key scheme design element three – Scope of containers

Consultation proposed that a NZ CRS would include all single-use beverage containers less than or equal to 3 litres in volume made from glass, plastic (PET, HDPE and PP, and recyclable bio-based HDPE and PET), metal and liquid paperboard. Fresh milk in all packaging types and refillable beverage containers were proposed to be exempt. Some containers are out of scope, including non-beverage products and cups.

171. The scope of eligible beverage containers broadly refers to the eligibility of beverage containers considered in scope of a NZ CRS. The scope of beverage containers is key to the design of any scheme as it determines which types of beverages and containers would be required to be registered and approved, and subsequently have a refundable deposit and be eligible to be returned for the deposit refund.

172. Eligibility can be determined by the:

- type of beverage container material (eg, plastic, metal, glass, liquid paperboard [LPB])
- size of beverage container
- type of beverage product (eg, dairy and non-dairy milk, soft drink, juice, beer)
- type of beverage container format (eg, bottles, cans, sachets, bladders).

173. Overseas, schemes have specific conditions of acceptance (eg, size, type, material) implemented through legislation to manage the containers eligible under a scheme. Eligible containers usually have means to determine acceptance for return, such as a scheme label or identifying mark, barcode, QR code or other form of unique identification.

174. Note, in addition to the packaging format requirements of the scheme, there may also be 'state of container' requirements to minimise public health risk. Such details would be worked out through the development and implementation phase of a scheme.

Relevant objectives

175. The beverage containers included within a scheme contributes towards the key policy objectives in the following ways:

- the more containers included in a scheme, the more materials that can be recovered through the scheme for recycling and reuse, and therefore the more containers prevented from being littered or landfilled
- less-recyclable materials may be subject to an eco-modulation fee, to incentivise producers to shift towards more recyclable container materials (see 'eco-modulation' in scheme financials section for more information)
- a broad, clear and easy-to-understand scope of containers makes it easier for consumers to participate in the scheme, and for community groups to coordinate collection/take-back drives or depots.

Core scheme component – definitions for 'beverage' and 'beverage container'

To be included in the scheme it must first be determined whether a product and its container meet the definitions for 'beverage' and 'beverage container'. Note the proposed definitions below are *proposed* and will be determined in primary legislation.

Beverage *means a liquid substance intended for human consumption by drinking.*

Beverage container *refers to a vessel or casing of a 'beverage' (regardless of whether it is sold individually or as a unit in a multipack) that is sealed and in an airtight and watertight state at the point of sale.*

Containers that do not meet the definition of a beverage container set by regulations are considered 'out of scope'. Examples of containers and products that are intended to be out of scope include non-beverage products (such as ice cream tubs), and drinks sold in non-airtight or sealed vessels, such as coffee cups. Pharmaceuticals are also not included within the current definition, although subject to regulation, some drinks such as health tonics may be included within the scheme.

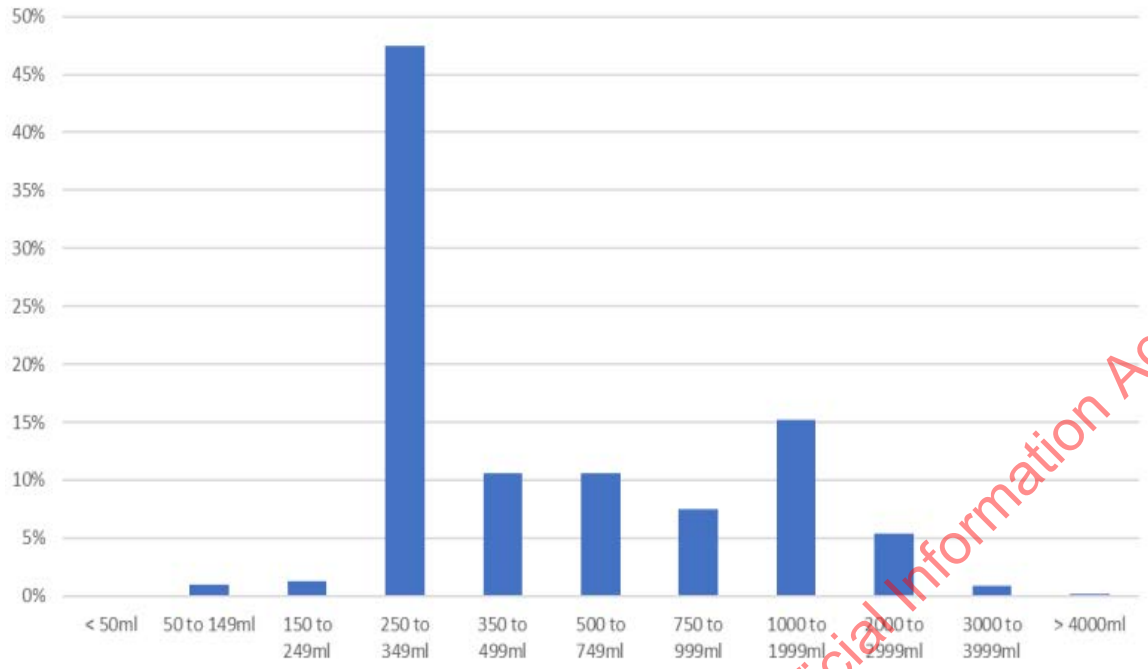
Container size limits

176. The size of eligible beverage containers varies between schemes elsewhere, with many including all single-use beverage containers less than 3 to 4 litres in volume or, as in Denmark, all containers less than 20 litres. For overseas schemes (where information on eligible beverage container sizes is available) the following broad categories apply for container size eligibility criteria:

- less than or equal to 3 litres
- less than or equal to 5 litres
- 100 millilitres to 3 litres
- greater than 3 litres.

177. New Zealand supermarket beverage sales data (figure 4) shows that most (99%) single-use beverage containers sold in supermarkets are less than 3 litres in volume. 2020/21 data shows that almost half of all beverage containers sold via supermarkets are 250 to 349 millilitres in volume, with over 95% of these being containers between 250 and 2,999 millilitres in volume. Examples from scheme operators elsewhere indicate that the small number of containers larger than 3 litres can be challenging to collect through a scheme, particularly where reverse vending machines (RVMs) are the main method for return.

Figure 4: New Zealand supermarket beverage container packaging size distribution (2020/21)



178. Australian schemes, such as Queensland and New South Wales, specify minimum beverage container sizes of 150 millilitres, however, the consultation document proposed to have no lower limit, to enable more containers to be captured by a NZ CRS and to simplify the scheme for New Zealanders. This aligns with overseas schemes, including South Australia, Northern Territory and most Canadian schemes.

179. Exempting beverage containers smaller than 150 millilitres could lead to perverse outcomes and litter, given that some beverages in New Zealand are smaller than this size (eg, some mixed spirit plastic containers are 40 millilitres).

180. While there is a small number of containers sold at the small size end (1.1% being 150 millilitres or less), exempting beverage containers smaller than 150 millilitres could lead to some products shifting to reduced size packaging. The risk of increased volumes and sales in products under 150 millilitres, and any associated litter issues, was a key reason for the consultation proposal to have no lower limit for the scheme.

Feedback on container size

181. Previous consultation on proposed priority products[72] showed a clear majority of submitters supported the proposed scope for beverage packaging that has more than 50 millilitres and less than 4 litres of capacity. This majority support carried through all submitter categories. Some submitters wanted a narrower range of volumes, including increasing the minimum beverage container size from 50 millilitres to 150 millilitres, or reducing the maximum from 4 to 3 litres. Others wanted to have no minimum volume, and no maximum volume, to cater for larger container outliers.

72 See submissions on proposed priority products and priority product stewardship scheme guidelines (2019): https://environment.govt.nz/publications/proposed-priority-products-and-priority-product-stewardship-scheme-guidelines-summary-of-submissions/

182. The *Transforming Recycling* public consultation demonstrated that most (77%) submitters supported the proposal that eligible beverage containers would be three litres or smaller.[73] However, a few submitters also noted that there should be a lower size limit, such as 100mL as in all European schemes. A key reason for having a lower size limit of 100mL is that CRS automated return systems are unable to accurately identify and manage most containers below 100mL.

183. Following consultation, we have revised the lower size range from 0mL to 100ml, noting that only 1.1% of beverage containers sold in New Zealand are 150 millilitres or less.

184. Our revised recommendation for a NZ CRS is therefore for a container to be eligible for the scheme it must be within the 100ml-3L (inclusive) size threshold. Beverage products/containers that fall outside of this range are proposed to be exempt from the scheme. However, in order to ensure oversight and transparency of exempt beverage containers, these containers would still be required to register with the scheme portal and provide some data and information as required.

Eligible beverage container materials

Consultation proposed that the following beverage container materials would be eligible for inclusion in the NZ CRS, if they under 3 litres in size:

- glass (all colours)
- plastic (PET, HDPE and PP, and recyclable bio-based HDPE and PET)
- metal (eg, aluminium, steel, tinplate and bimetals)
- liquid paperboard.

185. To strengthen waste minimisation and circular economy outcomes, the NZ CRS is proposed to include recyclable beverage container materials that have existing recycling pathways and stable markets, while also providing opportunities to support the growth of markets and better recycling outcomes for other materials (such as LPB).

186. Consultation proposed that the NZ CRS would target the beverage container materials that are most frequently bought, under-recovered and littered, rather than specific product types. The consultation document proposed that all single-use beverage containers would be in scope of the scheme and eligible to be approved for inclusion in the NZ CRS if they are less than 3 litres and made from one or more of the following frequently bought beverage container materials:

- glass (all colours)
- plastic (PET, HDPE and PP only, and recyclable bio-based HDPE and PET)
- metal (eg, aluminium, steel, tinplate and bimetals)
- liquid paperboard (LPB).

Trends for beverage packaging materials in latest New Zealand beverage sales data

187. New Zealand GS1 sales data shows that New Zealanders bought over 2.57 billion beverages in 2020/2021, in containers made from glass, metal, plastic, or LPB (Table 11). GS1 data also shows that New Zealanders are drinking more beverage products than ever before, across every packaging material type. In 2019/20 and 2020/21, sales volumes grew

[73] Industry stakeholders who supported the proposed size included Woolworths, Glass Packaging Forum, Packaging Forum, Brewers Association, DB, Lion, Garage Project, Spirits NZ, Brewers Guild, NZBC, Reclaim, NZ Association of Metal Recylers, Pact Group, Zero Waste Network and Para Kore (joint submission), Greenpeace, Fonterra, and Super Liquor.

9% and 7% respectively, with a significant increase in metal (aluminium) container sales. While the growth of sales volumes for glass has been relatively flat (approximately 1%), glass is still the top container material choice with 944 million containers sold (table 9), 92% of which were alcoholic beverages.

Table 9: New Zealand supermarket beverage sales by packaging material type for the 2020/2021 financial year

Packaging type (beverage containers)	Plastic	Liquid paperboard	Metal	Glass	Total
2018/19 total estimated containers	514,796,074	147,352,478	547,494,360	982,100,402	2,191,743,314
2019/20 total estimated containers	571,566,550	163,668,731	677,146,786	985,622,645	2,398,004,712
2020/21 total estimated containers	587,488,807	167,917,125	820,138,665	994,927,186	2,570,471,784
Estimated growth in container volume 2018/19–2019/20	11%	11%	24%	0%	9%
Estimated growth in container volume 2019/20–2020/21	3%	3%	21%	1%	7%

Scope of containers in overseas CRS

188. Approximately 90% of overseas schemes include beverage containers made of key materials – metal, plastic and glass – and some schemes (such as those in Canada and Australia) also include liquid paperboard (LPB). Some schemes exempt certain packaging formats and/or beverage product types irrespective of packaging material, such as milk.

Support for a broad scope of containers

189. 2020 Consumer NZ research showed that 64% of New Zealanders thought a NZ CRS should cover a broad scope of beverage container materials (ie, plastic, glass and metal).[74] Support for a broad scope of containers was also reflected in a 2019 consultation on proposals for priority products. A clear majority of submitters (97%) supported the proposed broad scope of beverage containers (ie, plastic, glass, metal, paperboard or mixed laminated materials) being declared as priority product. This included 85% support from business/industry.

190. Overall, most (89%) submitters in the *Transforming Recycling* consultation agreed with the proposed scope of beverage containers for the NZ CRS, includes glass (all colours), metal, plastic (PET, HDPE, PP and bio-based PET and HDPE) and liquid paperboard (LPB). A few submitters said the scope is too broad (eg, should not include glass) or too narrow.

191. Most submitters supported the proposed inclusion of plastic (86%), metal (86%), glass (88%). Many submitters supported the proposed inclusion of LPB (68%). However, as outlined below, the inclusion of glass was opposed by large alcohol beverage producers and the treatment of LPB was also contentious.

192. Having considered stakeholder feedback, we maintain that scope of containers be the same as what was consulted on. Further analysis for each of the proposed eligible beverage container materials is detailed in Appendix 3.

74 Consumer NZ. 2020. Beverage container return scheme: Phase 1 consumer research survey results.

Consultation feedback on glass

193. While most (88%) submitters supported the proposed inclusion of glass in the NZ CRS, large alcohol beverage producers and their associations/industry bodies were opposed the inclusion of glass within the scheme and wished to see a separate scheme for glass operate alongside NZ CRS. This alternative scheme is detailed in the GPF's alternative proposal for a product stewardship scheme design for glass (September 2022).

194. The key points of difference between the GPF's proposal and the NZ CRS is the absence of a refundable deposit for glass beverages (nearly one billion containers annually) and the inclusion of non-beverage container glass (estimates vary, and in any case, a relatively small proportion of the total glass volume to market).[75]

195. Many other beverage producers, industry bodies, and most individual submitters and councils want to see glass included within the scheme to reduce confusion and inefficiencies. This includes Woolworths, Foodstuffs, Retail NZ, WasteMINZ, TOMRA, Pact Group, Zero Waste Network and Para Kore (joint submission), Greenpeace Aotearoa and the Kiwi Bottle Drive form submission.

196. Having considered stakeholder feedback, we maintain that glass be included in the NZ CRS. Given its market share in the beverage containers sold, removing glass containers would negatively impact the scheme, reducing the benefit-cost ratio from 1.47 to 1.10.

197. The absence of a refundable deposit on glass containers would also fail to address litter, noting glass beverage containers make up a significant portion of the recognisable branded litter in New Zealand. Glass was the most sold and the most littered beverage material in 2018/19, representing half of beverage container litter items by count. Beer bottles represented the largest contribution to the national litter weights.

Consultation feedback on the inclusion of LPB (consultation and otherwise)

198. Many (68%) submitters agreed that LPB should be included in the NZ CRS, including Tetra Pak. Others said that LPB should not be included to encourage alternative and more sustainable packaging development. Others were concerned about a current lack of infrastructure and complex systems needed to recycle LPB.

199. Alternative or plant-based milks such as oat, almond, soy and coconut milk are typically sold in LPB cartons. Some submitters (including Foodstuffs, Woolworths and Glass Packaging Forum) cited that plant milks should be treated the same as fresh milk to ensure a level playing field. Reasoning included that plant milks are also a staple for many households, play a key nutritional role in New Zealand diets, and that exempting fresh milk could create a competitive advantage to the dairy industry.

200. LPB is a harder-to-recycle packaging material than HDPE (fresh milk packaging), and HDPE already has well-established recycling outcomes. Exempting plant milks from the NZ CRS would provide a perverse incentive for beverage producers to shift to this packaging format, and would see a significant volume of LPB containers with no means of being recovered for recycling.

201. Having considered stakeholder feedback, we maintain that LPB beverage containers be included in the NZ CRS. Better outcomes are possible for LPB containers if they are included in a NZ CRS, including:

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75 The latest GPF report estimates total container glass to market in 2020/21 was 258,748 tonnes (beverage and non-beverage). The GS1 and PWC 2020/21 estimates for beverage container glass to market was 253,610 tonnes.

- providing the means to collect greater quantities and cleaner streams of LPB (which would otherwise be landfilled or contaminate kerbside recycling systems)
- improved recycling outcomes for LPB through the proposed application of an eco-modulation fee to reflect the costs of recycling LPB
- reducing emissions through the reduced quantity of cardboard entering landfill
- excluding LPB from a CRS could have a free-rider effect and incentivise producers to switch to LPB as a cheaper packaging option.

202. SaveBOARD has developed an onshore waste-to-building materials plant with scalable capacity. The boards are downcycled from composite packaging such as LPB cartons, coffee cups, and soft plastics. It is estimated that this plant could make up to 4,000 tonnes of LPB building product material per year, which is about half of the estimated LPB beverage packaging tonnage sold in New Zealand in 2021. While circular recycling solutions are preferred, the SaveBOARD plant is a better outcome for post-consumer beverage LPB collected through the NZ CRS than the material being littered or landfilled.

203. In addition, we anticipate that eco-modulation of the scheme fees would reflect the actual end-of-life management costs of recycling/disposal, and could be extended beyond this to reflect broader environmental costs associated with the packaging format, including emissions considerations, the waste hierarchy, and material circularity. Eco-modulation would incentivise movement toward beverage container packaging that has greater recyclability and circularity.

Exemptions

204. Some beverage containers/products meet the proposed definitions of 'beverage' and 'beverage container' but are proposed to be exempt from the NZ CRS. An exemption made in regulation would have the effect of exempting the first responsible supplier from the scheme requirements, except for those relating to product registration (in the portal) and product data provision.

205. This means that these containers/products could still be sold in New Zealand and would not carry a refundable deposit and scheme fees in the purchase price, and could not be returned through the NZ CRS. Exempted beverage containers/products would still be subject to some level of regulation, including registration and data reporting requirements. Other beverage containers/products may be determined to be exempt from a CRS in future.

206. We consulted on the following exemptions from the NZ CRS:

- fresh white dairy milk in all packaging types
- refillable beverage containers
- containers above 3L in size.

Exemption for fresh milk in all packaging types

207. 'Fresh milk' includes white dairy milk that requires refrigeration. This definition includes cream but does not include beverages that are shelf-stable (long-life) or partially dairy/milk-based, such as (but not limited to) drinkable fermented dairy drinks like kefir, flavoured milk, smoothies, drinkable yoghurt and plant-based milk alternatives (eg, oat, almond, coconut, soy).

208. Fresh milk accounted for about 7% of the total beverages sold in New Zealand in 2020/21. New Zealanders bought about 183 million single-use fresh milk beverages in 2020/21, of which 97% were sold in plastic. The remaining 3% of fresh milk beverages (5.5 million) were sold in LPB packaging.

209. Overseas, fresh milk is exempt from most CRS schemes, including all Australian schemes. However, some depots overseas will receive plastic milk bottles regardless, because natural-coloured HDPE is a valuable recyclable commodity, fetching up to NZ$850 per tonne.

210. Unlike many other single-use beverages, fresh milk is not frequently consumed in the public domain. Typically, fresh milk is consumed 'at home' and thus these containers are captured by existing kerbside recycling systems. In 2018/19, about 86% of fresh milk plastic containers consumed at home were captured in kerbside recycling collections.

211. An additional cost, albeit with a refundable deposit, could have unwarranted financial impacts on households that are already recycling most of their milk containers through kerbside recycling systems.

212. The main gap in the recovery of fresh milk containers is from the commercial and hospitality sectors (such as cafés, restaurants, commercial offices, apartment buildings and hotels). We will continue to investigate alternative means of increasing recovery rates from these sectors, such as declaring fresh milk in all packaging types a priority product or strengthening obligations for commercial entities under the WMA 2008.

Consultation feedback

213. Many submitters (61%) opposed exempting fresh white milk, largely based on the need for simplicity and consistency of approach with other beverage types. Many of those opposed stated that they did not understand why dairy milk containers would be exempted, noting that it gave the dairy industry a competitive advantage over more sustainable alternatives that also have nutritional value. Some submitters were in support of the fresh milk exemption including Fonterra, Foodstuffs, Woolworths, and Visy Recycling.

214. Others were concerned that exempting fresh milk from the NZ CRS would create a precedent for many other product types and noted that an exemption would mean a loss of high value material recovery from HDPE milk bottles. The New Zealand Beverage Council (NZBC) opposed the proposed exemption of milk and Fonterra supported the proposed exemption, however both stakeholders supported a review of the exemption post-implementation and possible future inclusion.

215. If fresh milk is not included in the CRS, many (63%) submitters supported the Ministry investigating how to target the commercial recovery of fresh milk beverage containers through other means. There were mixed views on the proposal for the Ministry to investigate declaring milk containers a priority product and including them within another scheme, with only 56% agreeing with this proposal.

Recommendation for fresh milk beverage containers

216. We recommend exempting fresh milk from the NZ CRS as consulted on. However, having considered consultation feedback, we also recommend that the treatment of fresh milk is to be reviewed at the completion of the scheme's third year.

217. The exemption of fresh milk products is unlikely to affect littering, because unlike many other beverage containers, milk bottles are not frequently consumed in the public domain and then littered. A refundable deposit could have unwarranted financial impacts on households, who are already recycling most (86%) of their milk containers through kerbside recycling systems. Although milk alternatives (eg, plant milk) are a staple for some families, current volumes are relatively small and they are typically in LPB packaging which has limited alternative recycling options if not included in the NZ CRS.

Exemption for refillable beverage containers

218. The consultation document proposed that beverage containers which are intended for refilling and have an established return/refillables scheme would be exempted from a CRS at this stage.[76]

219. Refillable beverage containers[77] would not be eligible within the scheme at the outset and would not include a refundable deposit. This would not prevent existing refillable systems from operating, nor prevent new beverage producers from moving into the refillable/reusable market.

220. Subject to further analysis, future-proofing provisions for refillable containers are proposed be included within the CRS legislation. These provisions would enable refillable containers to be incentivised in future once further work has been completed,[78] for example, by using an eco-modulation fees and/or refillable targets.[79]

221. A large-scale refillable beverage system for New Zealand (either integrated within, or alongside a NZ CRS) would require new and different logistical management alongside national or regional collection and sterilisation infrastructure. Further investigation is required to determine the optimal arrangements to support a future shift toward reusable/refillable containers.

222. Implementing a NZ CRS would include procurement and development of scheme infrastructure (the return network and consolidation facilities), including consideration for how CRS infrastructure could support a future shift to reusable/refillable containers.

Consultation feedback on refillables exemption

223. The proposed exemption of refillable containers from a NZ CRS was supported by many (65%) submitters. However, most submitters (82%) also support a requirement for the NZ CRS to support the refillables market. We heard support and suggestions for how the Government could promote and incentivise the uptake of refillable containers more generally. Some submitters suggested that refillable options and research should be enabled and undertaken.

    The pro forma submission 'An Opportunity for a Reuse Scheme', supported by 452 submitters, argued that the proposed CRS is an opportunity to implement a centralised, complementary reuse scheme and advocated for including reusables in the CRS with lower scheme fees.

Recommendation for refillable beverage containers

224. The Ministry's advice remains that beverage containers that are intended for refilling (and have a verifiable, producer-established return and refill scheme in place) would be exempt

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76 Limited information is currently available on New Zealand's reuse systems. Some New Zealand businesses are considering or have already established (or re-established) their own return reuse/refillable networks for their products, taking the lead to develop a low-waste, low-carbon circular economy.

77 Further consideration would be given to the definition of 'refillable' and 'single-use' beverage containers at the regulation/legislation-making stage should a NZ CRS proceed.

78 Overseas, lower fees are often applied to reusable/refillable beverage containers so that they have a lower deposit than single-use containers.

79 Refillable targets are legally binding limits on the percentage of total packaging volume that must be refillable. For example, Germany has included a reuse quota in the German Packaging Law to ensure at least 70% of beverages are bottled in returnable packaging. Such measures would help to increase the market share for reusable beverage packaging, reduce the carbon footprint of beverage containers, alleviate the pressure on New Zealand's glass furnace capacity, and provide opportunities for growth in New Zealand's refillable container market.

from the NZ CRS for now. However, we are also proposing that the treatment of refillables would be reviewed at the completion of the scheme's third year.

225. Noting consultation feedback, and the potential for refillable containers to further reduce the emissions footprint of beverage production and consumption in New Zealand, the Ministry is undertaking further work to develop and analyse options for domestic beverage reuse/refilling systems independent of, and alongside, a NZ CRS.

Exclusions

226. Most beverage containers that are 3 litres or smaller can be categorised into single-use plastic, metal, glass and liquid paperboard containers.[80] Beverage container materials or packaging formats that are more difficult to recycle often end up as contamination in recycling streams, littered, or landfilled. This includes pouches, sachets, bladders, biodegradable plastic bottles, compostable packaging, and hard-to-recycle plastic types 3, 4, 6 and 7.

227. Hard-to-recycle plastics (types 3, 4, 6 and 7) are proposed to be excluded from a CRS, consistent with decisions to phase-out hard-to-recycle plastic packaging products. Beverage containers are typically not made from these types of plastic. These plastic types have limited markets for recycling or are technically difficult to recycle. Where recycling is possible, they often represent low economic value in a postconsumer recovery system.

228. Fossil fuel-based and bio-based 'biodegradable' or 'compostable' plastic products contaminate the recycling stream and many composting plants will not accept them. Compostable packaging is being addressed through the Ministry's waste work programme.

229. Consultation proposed that primary legislation would specify that beverage containers that do not meet the criteria to be eligible and are not subject to an exemption, would be excluded from the scheme and prohibited from sale in New Zealand.

Consultation feedback

230. The consultation document outlined the proposed treatment of excluded container but did not seek specific feedback on this matter. However, we did receive feedback from submitters including Greenpeace Aotearoa and WasteMINZ Product Stewardship Sector Group supporting the proposed treatment of excluded containers if this means that these problematic materials will not be able to be put on the market.

Recommendation for treatment of excluded containers

231. If a NZ CRS proceeds, criteria for assessing products would need to be developed and would be consulted on at the regulations exposure draft. This would include the timing of when excluded containers would be prohibited from sale.

Out of scope beverage products, containers, or container materials

232. Containers that do not meet the definition of a beverage container set by regulations are considered 'out of scope'. Examples of containers that are intended to be out of scope include non-beverage products (such as ice cream tubs), and drinks sold in non-airtight or sealed vessels, such as coffee cups. The rationale for non-beverage products and cups being out of scope is detailed in the interim RIS and Appendix 3.

233. A few submitters wanted to see other out of scope product types such as ice cream tubs or butter containers included in the scheme. Some submitters also noted that a framework

[80] GS1 New Zealand Supermarket Beverage Packaging volumes analysis 2020 and 2021.

or process should be established to ensure additional containers can be added to the list in the future.

234. Many submitters mentioned the exclusion of coffee cups within the definition of an eligible beverage containers. Many of these submitters noted that if the decision was made to not ban single-use coffee cups, that these should be added into the scheme.

Proposal for out of scope containers

235. The Ministry's advice remains that the NZ CRS should be limited to beverage containers, and that containers that do not meet the definition of a beverage container would be out of scope and unaffected by these proposals.

Beverage lids

236. Beverage lids can include tethered caps, metal pull-tabs (eg, on cans), metal crown caps (eg, beer bottle caps), metal screw bottle tops (eg, wine caps), plastic or metal ring-pull caps, and plastic screw caps. A CRS could also provide a service to collect and recycle beverage lids. Most overseas schemes accept and encourage consumers to return empty beverages with their lids attached to the container, or 'lids-on'.

237. Beverage lids and caps are often littered in New Zealand. The Keep New Zealand Beautiful 2019 National Litter Audit reported that metal bottle caps, lids and pull tabs were the fifth most commonly littered sub-category (2534 in total; 5 items per 1000m^2). Plastic bottle tops were also frequently littered (729 in total). Lids are often not captured in current kerbside recycling systems, and end up littered or landfilled, because they are too small.

238. In order to reduce the number of lids that end up as litter and to increase the recycling rate of lids, the consultation document recommended that beverage containers to be returned with their lids-on, for all beverages that are able to have their lids attached. This would help to ensure that more lids are returned, as well as limiting odour and hygiene issues at return points.

239. If a NZ CRS proceeds, collecting and recycling lids will be the responsibility of the PSO.

Table 10: Scope of containers – analysis against scheme design criteria

Note: The table includes key areas of interest for some stakeholders – the PwC model can provide for a very wide range of analyses/scenarios

Criteria Comments/interpretation of criteria for this option	Broad scope of container materials ('glass in', 'milk out') Include: all beverages in metal, plastic (1, 2 and 5), glass and LPB containers Exclude: fresh milk in all container types	Broad scope of container materials ('glass in', 'milk in') Include: all beverages in metal, plastic (1, 2 and 5), glass and LPB containers	Narrowed scope of container materials ('glass out', 'milk out') Include: all beverages in metal, plastic (1, 2 and 5), and LPB containers Exclude: all glass containers and fresh milk in all container types
Recovery of beverage containers Does the design option enable high recovery of beverage containers?	This option would have the potential to achieve a high recovery rate of beverage containers, given that an estimated 2.38 billion (or 92%) of potentially eligible beverage containers would be able to be returned through the NZ CRS annually (ie, excluding approximately 183 million fresh milk beverage containers).	This option would enable the highest recovery of beverage containers, given that an estimated 2.57 billion (or 100%) of potentially eligible beverage containers would be able to be returned through the NZ CRS annually.	This option would reduce the total number of eligible beverages by nearly 1 billion glass containers and approximately 183 million fresh milk containers. Only an estimated 1.39 billion (or 54%) of potentially eligible beverage containers would be able to be returned through the NZ CRS annually. Glass containers have the highest recycling rate of any container type currently at ~51%. However, the glass market has significant barriers to recycling more recovered glass that the proposed CRS would address.
Litter reduction Does the design option reduce the harmful impacts of beverage containers being littered?	This option would have the potential to achieve a high reduction in litter as all of the container types that are commonly found in the litter stream are in scope (fresh milk is not commonly consumed while out and about and correspondingly, fresh milk containers are not commonly found in the litter stream).	This option would have the potential to achieve a high reduction in litter as all of the container types that are commonly found in the litter stream are in scope.	Glass was the most sold and the most littered beverage material in 2018/19, representing half of beverage container litter items by count. Beer bottles represented the largest contribution to the national litter weights.[81] Excluding glass from a scheme would significantly impact the scheme's ability to reduce beverage container litter.

81 Beverage containers constituted 66% of recognisable branded litter and 24% of all litter collected. Alcoholic beverage containers and packaging were the predominant industry source of branded litter (49.6%), followed by non-alcoholic beverage containers and packaging (14.3%). Source: Keep New Zealand Beautiful.

Criteria Comments/interpretation of criteria for this option	Broad scope of container materials ('glass in', 'milk out') Include: all beverages in metal, plastic (1, 2 and 5), glass and LPB containers Exclude: fresh milk in all container types	Broad scope of container materials ('glass in', 'milk in') Include: all beverages in metal, plastic (1, 2 and 5), glass and LPB containers	Narrowed scope of container materials ('glass out', 'milk out') Include: all beverages in metal, plastic (1, 2 and 5), and LPB containers Exclude: all glass containers and fresh milk in all container types
Efficient scheme operation Does the design option enable an efficient and easy-to-use scheme?	An efficient, easy to understand and accessible scheme for consumers is where all of the main beverage container types are eligible for a refundable deposit. Exempting fresh milk in all packaging types from a NZ CRS would still enable an efficient and easy-to-use scheme. Fresh milk is largely consumed at home and households are already recovering 86% of their HDPE containers.	An efficient, easy to understand and accessible scheme for consumers is where all of the main beverage container types are eligible for a refundable deposit.	A scheme with too many rules (exclusions or exemptions) for different beverage container types can be confusing for consumers and lead to poorer scheme performance. Excluding glass containers from the scheme would significantly reduce the overall benefits of a NZ CRS due to the size of the glass market. In the NZD 20c deposit scenario and over a 30 year time horizon, the BCR dropped from 1.61 for a 'glass-in' scheme to 1.1 for a 'glass-out' scheme. Net benefits dropped from NZ$1.39 billion (glass-in) to NZ$167 million with glass-out.
'Fair' scheme operation Does the option enable the scheme to be even-handed and not unfairly advantage/disadvantage scheme participants? *Cost-benefit considerations and stakeholder views*	Excluding milk from a NZ CRS is estimated to reduce scheme net costs for households by NZD 5–6 cents per week. However, it also prevents the face value price increase of fresh milk by NZD 23c (+GST) on a product that is considered an essential grocery item by many households. Assuming 100% pass through of costs to consumers, the net cost of all other beverage containers being in scope of the scheme is estimated to be $1.50 per week for the average household. While not an insignificant cost, these products are largely non-essential items including alcohol, soda and juices, and the total number of beverages sold to market has been growing rapidly	Including all beverage containers and all material types (including plastic, aluminium, glass and liquid paperboard) will ensure a level playing field in the beverage industry.	Excluding glass from the NZ CRS scheme significantly impacts the scheme financials, as well as the wider monetised costs and benefits. A 'glass out' scheme creates an uneven playing field for the beverage industry as glass beverage products would not carry the same face value refundable deposit and scheme fee (NZD 23c +GST in year 1). While this option would shift costs from councils (to some degree), the product face value price differential of a scheme with refundable deposit operating alongside one without, does not represent a level playing field for beverage producers. Further, it may incentivise a move towards more glass packaging when the market is already in an oversupply situation.

Key scheme design element four – Financial model

Consultation proposed that a NZ CRS would use a 'deposit' financial model which would require beverage producers/manufacturers to pay a deposit on all eligible beverage containers sold to market, regardless of whether these containers are returned through the scheme.

240. The financial model of a CRS creates a structure for how the scheme manages money flows and transactions. It is one of the key design considerations that needs to be balanced to get an efficient, effective and workable scheme that is fair to all participants.

241. To start a scheme, an investment by the scheme's PSO is required to cover the upfront costs, including the establishment of the scheme's core infrastructure and the PSO's operational costs. Over time, these upfront costs will be recovered by the PSO from the scheme itself as more containers are returned through the scheme. In most CRS schemes, large beverage companies and/or organisations established by a consortium of companies establish and govern the PSO.[82] These companies are responsible for financing the (not-for-profit) PSO's establishment costs.

Relevant objectives

242. A key policy objective is to achieve high beverage container recovery rates. As recovery rates drive costs, an industry-led scheme can create tensions that seek to reduce costs by managing the scheme towards lower recovery rates.

243. The financial model, on balance with other key design settings such as legislated return targets and the return network design, can incentivise the PSO to ensure a scheme is easy and convenient to use for consumers.

Options considered for the scheme financial model

244. The scheme itself generally has one of two types of financial model: often known as the 'deposit' financial model and the 'refund' or 'redemption' financial model. The main difference depends on whether beverage importers and producers are required to pay the full scheme fees (including the full deposit value) for any eligible beverage containers that they place on the domestic market.

Deposit financial model

245. Under the deposit model, beverage producers pay for scheme fees and deposit fees on all eligible containers sold to market, regardless of whether the containers are returned through the CRS. This helps manage the perverse incentive risk that beverage producers are financially motivated towards lower return rates.

246. Most of the best-performing schemes globally (eg, European schemes) use a deposit financial model.

247. Under the deposit financial model, beverage containers that are not redeemed by the consumer for the refund (for example, that go to kerbside recycling, landfill or litter) would also be used by the PSO to offset the scheme's operating costs. This would lower the scheme fees for consumers at the point of purchase.

248. However, the deposit model increases the start-up cost to beverage producers at the outset of a scheme. To mitigate this, producers and retailers are typically provided a transition

82 See section three, 'Scheme governance' for more detail on the PSO arrangements.

period to migrate stock to new barcodes and labelling requirements which allows producers to manage their transitional arrangements and costs.

Refund financial model

249. Some schemes use a 'refund financial model' rather than a 'deposit financial model'. Under the refund model, beverage producers would only pay the deposit fee and scheme fees for the amount of containers returned for recycling. For example, if only 50% of containers sold to market are returned through a CRS, the beverage producer would only need to pay 50% of the deposit amount. Under the refund model, scheme fees would be higher, as there would be no unclaimed deposits to offset the scheme fee cost.

250. Australian schemes typically use the refund model. They require a government loan to support start-up of the CRS and the schemes have relatively low recovery rates compared to many other overseas schemes.[83]

251. Although the refund model reduces the up-front financial contribution for beverage producers to the CRS, the risk is that producers are incentivised towards lower return rates over the life of the scheme. The fewer containers that are returned, the less producers are required to pay into the scheme. The refund model can create an unnecessary tension that undermines scheme performance.[84]

Submitter feedback on financial model

252. Most submitters (89%) support the deposit financial model. Submitters in favour noted the deposit model works well for European schemes, is more equitable than the refund model and provided stronger incentives for the scheme. A few submitters, mainly businesses, provided conditional support, noting more clarity is needed on how the unclaimed deposits would be used to offset scheme costs.

253. A few submitters did not support the deposit financial model, and instead support the alternative 'refund' financial model (as used in Australian schemes). These submitters noted that the deposit model may mean smaller beverage producers face higher upfront costs, and that the refund model allows for payments to be made 'in arrears' and that to enable this model, the government should provide an up-front loan to the scheme.

Preferred option summary

254. If a NZ CRS adopted a refund model, the scheme would need to be accompanied by strong regulatory drivers and/or stronger scheme governance and central government oversight to ensure the scheme would not be susceptible to perverse incentives and would achieve the recovery targets. The refund model risks the potential for a perverse incentive, given that fewer containers recycled directly reduces the upfront scheme costs for the beverage industry.

255. Alternatively, if a deposit model was chosen alongside a mandatory return-to-retail network there would be less financial incentive (or ability) for an industry-led scheme to limit return rates of eligible containers in order to reduce scheme costs.

83 For example, the Queensland and New South Wales schemes recover only 58% and 70% of containers respectively, compared to higher-performing European schemes that achieve over 90% recovery.

84 The deposit financial model does not require a Crown loan to float the scheme. The refund financial model does require a Crown loan to float the scheme.

256. Consultation proposed that the NZ CRS would have a deposit financial model. The deposit model is a means of regulating a CRS to more enact product stewardship principles, which helps to ensure a high recovery of beverage containers.

257. The deposit model makes producers financially responsible for the cost of recycling their containers by requiring them to pay the full deposit amount into the scheme for all containers produced. The deposit model has the added benefit of ensuring the scheme's deposit float is self-funding from the outset.

Key scheme design element five – Scheme governance

Consultation proposed that the NZ CRS would be a not-for-profit, industry-led scheme.

258. Container return schemes are usually managed by an external organisation, appointed by the government for the purpose of managing and overseeing the scheme. Many schemes also include a governance board, responsible for ensuring the scheme meets and exceeds the scheme's requirements as set out in legislation or regulations.

259. A scheme's PSO is typically set up as a not-for-profit to ensure that scheme revenues are solely used to support the operation of the CRS scheme. The organisation is responsible for administering the CRS in accordance with the legislation and regulations that govern the scheme's establishment and operating framework. The agency manages both the monetary and container recovery material flows, growing the scheme quickly towards its performance targets. It must also manage fraud risk and ensure smooth operations and a high level of service for all customers and stakeholders that participate in the scheme.

260. Most overseas schemes are led by the beverage industry, often through a collaboration between multiple beverage producers (typically large producers). Retailers are also frequently involved in the scheme governance where the return-to-retail model is used. Globally, schemes use different degrees of regulatory or structural controls to balance the incentives and interests in a scheme.

Relevant objectives

261. The governance model for a CRS is best considered in light of other design considerations, such as the deposit amount and network design, to ensure overall balance within the design and to best meet the overarching policy objectives.

Options considered for scheme governance

262. Governance and management structures vary across CRS schemes. Some schemes have one manager that oversees the entire operation of a scheme (financial management and container recovery), while other schemes split the responsibility for administrative oversight and operational oversight between two or more organisations.

263. It is widely recognised that industry is well placed to ensure the scheme is run as efficiently as it can be. However, given a scheme's costs increase with return rates, a scheme must be well designed and established in legislation in such a way as to ensure that pursuing efficiency of the scheme operations does not have a negative impact on recovery of containers.

264. Split structural models have been used in Australia (eg, New South Wales) to better manage tensions that exist within their scheme designs. In contrast, European schemes tend to have a sole scheme manager (usually made up of beverage producers and retailers), because they have more structured regulatory requirements (such as higher deposit levels and mandatory return-to-retail requirements).

265. Schemes may also be run by a majority of non-beverage industry representatives. These options may be considered necessary for a less-regulated scheme design.

266. In most CRS schemes, large beverage companies and/or special purpose organisations established by a consortium of companies seek to establish and govern the PSO once a scheme is committed to in legislation and/or regulation. These companies also typically finance the PSO's establishment costs. In some situations, a government loan may be required to float some or all of the scheme start-up costs. In either case, scheme start-up costs are recovered from the scheme itself once the scheme is operational and any loan (whether industry or government funded) would be of relatively short duration.

Submitter feedback on governance

267. The proposal for a not-for-profit and industry-led scheme was supported 76% of respondents, largely industry associations, some businesses, and some local government submitters.

268. Although supported by a range of industry bodies (for example the Food & Grocery Council and the Brewers Guild) and businesses, the proposal for the scheme to be industry-led attracted some concerns from advocacy groups (eg, the New Zealand Product Stewardship Council) and Local Government representatives (eg, Auckland City Council and the TAO Forum). This view was also reflected in the Kiwi Bottle Drive pro forma submission which attracted nearly 4,000 signatures. Key objections raised were:

- concerns about conflicts of interest and politics across industry bodies
- that a small number of larger bodies would end up dominating decision-making
- that it was important that governance of such a scheme should represent diverse stakeholders and community interests, not just industry
- that the PSO be based on Te Tiriti partnerships, with Māori engaged on all levels of the scheme.

Preferred option summary

269. The proposed governance model is for a not for profit, industry-led body 'product stewardship organisation' (PSO) to ensure the scheme is run efficiently and effectively. The structure provided by key regulated design elements (namely a degree of mandated return-to-retail obligation, minimum 10 cent deposit requirement in legislation with a view to establishing a 20 cent deposit, and the deposit financial model) creates the framework necessary for higher recovery rates.

270. The NZ CRS could be led by retailers and beverage producers or any combination of industry representatives. An industry-led scheme does not necessarily exclude community, NGO, or iwi/Māori representation from having a role in and/or representation on the scheme's governance board. Any proposal to become the PSO will need to be considered and approved by government in accordance with the NZ CRS design standards (refer section 5 Implementation).

271. In September 2022 the Ministry commissioned analysis and recommendations on legislative and regulatory options to implement a New Zealand CRS. Based on a review of best practice European schemes and analysis of the New Zealand context, the report recommends establishing a single scheme PSO which is owned by the beverage and retail industry and responsible for managing all the scheme finances, data, collections (including depots) logistics, and meeting targets. This approach would enable industry the flexibility to develop the most cost-effective system within the respective government's regulatory framework and enable the Government to take an independent monitoring role.

272. To ensure optimal performance, the report recommends that a range of matters are mandated via legislation and/or regulation, including:

- the minimum refundable deposit amount and mandated retail take-back
- minimum obligations of producers and retailers in managing the scheme
- reporting requirements, targets and penalties

- that the government reserve the right to appoint board representation.

273. Central government would play a key role in the establishment of a scheme, then move into an oversight role. Legislation would set out requirements for a government agency (proposed to be the Ministry for the Environment or its authorised third party) to act as the monitoring agency for the scheme. The Agency's role would be to receive reports from the scheme's PSO, and review the scheme's management and performance (including whether it is meeting any legislated recovery targets).

274. It is proposed that scheme fees would take into account costs to the regulatory agency (or agencies) of compliance, monitoring and enforcement, as well as other government costs (so that these are not borne by taxpayers).

Additional scheme considerations- Scheme financials

275. Industry feedback through consultation on the proposed scheme costs required review and where appropriate, updates to the PwC scheme financial modelling that then flow into the Sapere cost benefit analysis.

276. Key focus areas on the proposed scheme's financials for industry feedback (aside from strongly advocating for a 10 cent deposit) include the proposed tax treatment of the refundable deposit (now changed), handling fee assumptions, inflation adjustments, return rate modelling assumptions and the modelled reduction in demand.

277. Table 11 below highlights the key industry feedback (via Deloitte and NZIER) and the approach taken by PwC and the Ministry.

Table 11: Industry feedback on scheme financials

Modelling aspect	Deloitte	PwC /MfE
Inflation	Assumption has changed	Assumption updated
Return rate target	Modelled 84%, proposed target 90%.	Base case now 90% (after five years of scheme operation).
Deposit GST treatment	Advocacy for Australian approach (GST included)	IRD has updated its advice, deposit is now treated as GST inclusive.
Handling fee assumes 6.3 cents (2020 real cost).	Assumption costs incorrect (7.5 cents – 11.2 cents) – based on selected schemes.	Publicly available information differs, assumption costs updated and Deloitte worst case scenario (11.2 cents) sensitivity tested.
Price elasticity and **reduction in demand** (assumed 6.5% and noting recent NZ beverage container sales growth at 9% and 7%, 2019 -2021).	NZIER based on Queensland Productivity Commission report (10c deposit), 20 cents would be higher.	Evidence is poor (price elasticity) and there is evidence above and below 6.5%. Sensitivity test applied ranging from 0% - 14.65% demand reduction.

278. Taking all of the above into account, including adjustments for inflation, and that the refundable deposit is now GST inclusive, the net effect on the PwC scheme financial modelling is a reduction of the estimated total scheme financial cost.

279. The updated total scheme financial costs are now $44 million less in year one ($509 million), and $37 million less in year five ($587 million), against the scenario presented for public consultation.[85]

[85] Costs assume a 20 cent deposit level, consistent with the consultation.

Refundable deposit tax treatment

280. Inland Revenue have noted that GST will apply to the increased price of scheme containers. Households that return their containers will not pay any extra GST under the scheme (all other things being equal) because the proposed refundable deposit amount (20 cents) is now GST inclusive. The PwC scheme financial modelling for public consultation assumed the deposit refund was GST exclusive.

281. GST registered taxpayers will be able to claim a deduction of the additional GST cost in the normal way, provided the costs of the scheme containers are incurred in making taxable supplies. Advice from IRD confirms that a beverage container returned within a scheme is considered a second-hand item under the Goods and Services Tax Act 1985.

282. This saving has more than offset additional cost updates modelled post consultation.

Scheme fees

283. Scheme fees are separate to the refundable deposit incentive and provide for the administration costs of the PSO (operational and capital expenditure). This includes recycling costs (shipping, processing and consolidation, etc), and marketing and communication costs, and are estimated to be 4.63 cents per container in year 1 and 3.921 cents in year 5.

284. Handling fees are another type of scheme fee that vary by return point type are modelled at 6.65 – 7.61 cents per container in year one, increasing to 7.19 -8.24 cents per container by year 5.

285. All scheme fees (administrative and handling fees combined) are offset by the PSO through scheme revenues. Scheme revenues include the sale of the recyclable commodities (aluminium, plastic and glass) to either onshore or offshore markets; any interest on revenue; and the proportion of refundable deposits paid into the scheme that remain unredeemed when containers are littered and landfilled.

286. Under the deposit financial model, the total net scheme fee costs (after offsets) are estimated at 3.8 cents in year one and 6.3 cents per container in year five. Assuming full pass through of scheme costs and under the 20 cent refundable deposit scenario (17.4 cents plus 2.6 cents GST) and assuming the above scheme fees and offsets, the consumer is likely to experience a 24 cent per container increase in year one, and a 28 cent increase per container in year five (including GST). 20 cents (including GST) in this scenario, will be refundable.

Handling fee sensitivity testing

287. Beverage industry feedback suggested handling fees could be as high as 11.2 cents per container. This assumption appears relatively high based on international evidence and informed by Australian depot-based scheme costs, which can include greater profit margins.

288. This proposed alternative assumption has been included as a sensitivity test by PwC. Assuming the 20 cent deposit scenario, if depots were to receive handling fees of 11.2 cents per container, and assuming all else remains equal across the design, the fee increase would increase total scheme costs by $9 million in year one and $13 million in year five. This would increase the net cost of the scheme to households to $62 in year one and $101 in year five (from $56 - $93), still lower the consultation scenario base case of $78 - $103.

Reduction in demand assumption

289. A 6.5% reduction in demand for beverage containers has been assumed as a result of the NZ CRS implementation in a 20 cents scenario. NZIER note this assumption is based on Queensland Productivity Commission report and a 10c deposit (NZD 11 cents) scenario and at NZD 20 cents, the impact could be higher.

290. Price elasticity evidence is poor, a key point acknowledged by NZIER. The likelihood of a greater impact may also be considered against the likelihood of a lesser impact as has been seen in some markets and product types. Therefore, sensitivity testing was applied by PwC ranging from a 0% - 14.65% demand reduction.

291. Noting that a greater reduction in demand means less containers sold, it also means fewer containers for the scheme to manage which reduces scheme costs.

292. Assuming the 20 cent deposit scenario:

- if demand were to reduce by 14.65% (more than double the base case), and assuming all else remains equal across the design, total scheme costs would reduce by $44 million in year one and $50 million in year five. This would decrease the net cost of the scheme to households to $51 in year one and $84 in year five (from $56 - $93, base case assuming 6.5% reduction)
- if demand were to remain unchanged (0%) and assuming all else remains equal across the design, total scheme costs would increase by $35 million in year one and $41 million in year five. This would increase the net cost of the scheme to households to $60 in year one and $99 in year five (from $56 - $93), still lower the consultation scenario base case of $78 - $103.

Eco-modulation of scheme fees

293. Eco-modulation is a variable fee pricing mechanism used to reflect the costs of recycling a given product, and which can be used to improve waste minimisation and circular economy outcomes. The fee typically increases when a product/material is hard-to-recycle, whereas easy-to-recycle products/materials have lower scheme fees, encouraging producers to use readily recyclable materials. The eco-modulation fee incentivises producers to improve the environmental sustainability of their product design.

294. Eco-modulation ideally follows the ‘true cost’ principle to reflect the actual end-of-life management costs of products, plus the associated environmental costs. It aims to individualise producer responsibility by linking the financial responsibility for a product with its true life-cycle management and environmental costs.

295. The amount of an eco-modulation fee usually varies depending on whether products (beverage containers in this case) are designed towards the top, middle or lower levels of the waste hierarchy. Products designed for enabling reduction and re-use should incur lower fees than those solely designed for improved recyclability. Products that are hard to recycle (eg, recovery/disposal tier) would incur higher fees to incentivise producers towards better packaging choices.

296. Consultation proposed that the NZ CRS scheme fees would be eco-modulated to incentivise more recyclable packaging and, in the future, reusable packaging.

Consultation feedback on eco-modulation

297. Most (90%) submitters supported including variable scheme fees. Many submitters explained that this could incentivise the use of packaging that is easier to recycle and increase the circular potential of packaging. Some submitters also noted that this

approach could encourage more producer responsibility and lead to increased innovation for packaging options.

298. A few submitters noted that clear definitions were needed to ensure calculable measures be used to allocate fees, and to avoid political influence on pricing of certain products. Some submitters noted that the fees should be flexible and regularly reviewed to ensure changes in materials and their life cycles and costs are considered, and fees adjusted accordingly.

299. Beverage producers generally supported the inclusion of scheme fees and eco-modulation. However, many of these submitters did not agree with the use of the terms of 'recyclable' and 'environmental costs' in the application of the scheme fees and wanted further detail on the eco-modulation proposals to be provided.

300. Eco-modulation of scheme fees is a key mechanism within the proposed NZ CRS. It is recommended that all containers collected through the NZ CRS will be sent to a recycling market (domestic and export markets), and wherever possible, this outcome should be a food grade 'container-to-container' recycling requirement. A more advanced application of eco-modulation could also provide market signals towards emissions reductions and broader circular economy outcomes.

301. Taking into account consultation feedback, Ministry officials are undertaking further analysis on eco-modulation of scheme fees to inform future decisions on regulatory settings, and implementation and operation details will be provided for in regulations. If a NZ CRS proceeds, eco-modulation criteria would need to be developed with industry and through further targeted consultation on regulations.

Additional scheme considerations - Legislative Implications

302. New legislative provisions will be required to implement a NZ CRS. We recommend that the design as set out in this paper would be progressed alongside proposals to repeal and replace the WMA 2008, with the proposals in this paper being set out in a separate part of the new Act.

303. The broad approach to regulation for a NZ CRS would see substantial decisions (including the refundable deposit rate and the types of containers to be included, excluded or exempt) set by the Minister for the Environment.

304. Certain matters will be decided by the Secretary for the Environment (or other delegated authority). This includes, for example, the information to be provided to support compliance and performance monitoring, specification of network design standards, and specifying how the handling fee will be set. These matters are either highly technical or administrative in nature and consider Ministers are not best placed to determine these matters. Further detail is provided in the implementation section below.

Summary of consultation feedback and the recommended scheme design options

305. As set out in table 12, consultation feedback demonstrated very high levels of support for the implementation of a NZ CRS and many key design elements.

Table 12: Overall support and key design considerations of the proposed NZ CRS

Key CRS design consideration	In support (quick submission)	In support (detailed submission[86])	Combined total (where applicable)	Kiwi Bottle Drive form submission
Overall support for a CRS (% and number of submissions)	92%	90%	92%	a further 3,996 indicated support
20 cent deposit amount	90%	77%	88%	a further 3,979 indicated support
Deposit financial model	-	89%	89%	-
Scope of containers (glass, plastic, metal, liquid paperboard)	90%	82%	89%	a further 3,982 indicated support
Fresh milk exemption	40%	34%	39%	a further 3,978 indicated they **do not** support the exemption
Return targets (85 % by year 3, and 90% by year 5)	-	85%	85%	-
Governance (not-for-profit, industry led)	-	76%	76%	a further 3,696[87] indicated that they **do not** support an industry led scheme
Mixed model with a high level of mandated return-to-retail	-	86%	86%	a further 3,696 submitters support a mixed model network but want to see more depots

306. A summary of the final recommended key design elements are outlined in table 13 below, including additional details post-consultation.

[86] These figures include survey data collected via the Ministry's submission tool, emailed submissions and the results of a survey carried out by the Hasting District Council which asked its constituents a selection of questions from the *Transforming Recycling* Consultation. There were 95 responses to the survey.

[87] This is the number of submitters that signed the form submission with no changes so can be taken as agreeing with this statement. Another 300 submitters also signed the submission but did not specifically indicate agreement to this aspect of the submission.

Table 13: Key scheme design elements and additional details post-consultation

Key consideration or design element (as consulted on)	Additional details post-consultation
including all single-use metal, plastic (PET, HDPE, PP, and recyclable bio-based PET and HDPE), glass (all colours) and liquid paperboard (LPB) beverage containers	the Ministry for the Environment and PSO to develop a clear process for considering additional beverage packaging types
container size 3 litres and smaller	lower limit of 100mL.Containers outside this scope will be subject to data and reporting
beverage container lids	the PSO is responsible for collecting and recycling beverage container lids
a mixed model network with regulated take back obligations for retailers that sell beverages	the degree of take back obligations to be established via regulation
exempt fresh milk in all packaging types	review the treatment of fresh milk at the completion of the scheme's third year
exempt beverage containers that are intended for refilling and have a producer established return and refill system in place	review the treatment of refillables at the completion of the scheme's third year
eco-modulation of the scheme fees	further detail such as the criteria for eco-modulation to be provided in the next paper
deposit financial model	consistent with international best practice, precludes the need for a Government loan
not-for-profit and industry-led	consistent with international best practice. Does not preclude broader representation on the scheme's Governance Board, or the ability of the Government to appoint representation
mandatory return targets of 85% from year 3 and 90% from year 5 onwards	consistent with international best practice

Section 4: What are the marginal costs and benefits of the option?

Overview of costs-benefit analysis process and analysis

307. Sapere Research Group (Sapere) has undertaken a series of cost-benefit analyses (CBAs) of the NZ CRS as it has evolved through and then beyond the co-design process in 2020. Attached is the fourth iteration, having undergone independent reviews by Sense Partners and NZIER.

308. The CBA looks at economic costs and benefits including reduced litter clean-up costs, reduced contamination of kerbside recycling and additional value from material recycled. With a 30-year time horizon and a NZD 20 cent deposit level, a NZ CRS would have net benefits of NZD$995 million and a benefit-cost ratio of 1.47 (0.63 to 2.08).[88]

309. This fourth iteration CBA has now been updated following consultation feedback. Key updates include:

- new willingness to pay (WtP) evidence
- the assumption on litter volumes has drawn criticism and an alternative approach to addressing gaps in data and uncertainty around material flows has been included
- updated financial modelling from PwC received October 2022 which includes:
    - o expected return rate
    - o expected start date which changes the magnitude of discounting
- further consideration of distributional effects
- participation rates.

310. The estimate of welfare gains from reduced litter and increased recycling is an important aspect and the Sapere CBA uses an average of willingness to pay studies. While acknowledging the large spread in estimated benefits, the studies represent the best available information and the Sapere CBA has taken a more conservative approach by using a range from the willingness to pay studies and presenting an average.

311. The fourth version of the CBA has been through internal review. An additional independent peer review process has been delayed due to unforeseen illness (COVID-19), but will be concluded in advance of Cabinet consideration of the proposal. Any material changes as a result of independent review will be provided to the Ministry for the Environment ahead of Cabinet committee. Feedback and improvements from all previous reviews have been included in the CBA attached to this paper. The Sapere NZ CRS CBA is relatively conservative and we note that international schemes have been established based on less conservative assumptions.

Commentary on monetised costs and benefits analysis

312. The latest iteration of the cost-benefit analysis prepared by Sapere is attached in full at Appendix 2. The below costs and benefits table (table 14) is drawn from that report. Key assumptions include a 30 year time horizon and the Treasury recommended 5% discount

88 The CBA uses Treasury's 2021 discount rate of 5%. The benefit-cost ratio range reflects the range of benefit values in the international literature for litter reduction and increased recycling.

rate. Costs are dominated by household participation and CRS infrastructure operating costs. Benefits are dominated by welfare gain from additional recycling and litter reduction.

313. Key assumption inputs such as the modelling time period, discount rate and household willingness to pay for litter reduction have sensitivity testing applied and can be found in the Sapere report. The sensitivity testing suggests the benefit-cost ratio (of 1.47) is relatively stable in most scenarios tested.

Table 14: Key monetised impacts table, drawn from Sapere's cost-benefit analysis

Key impacts and affected groups	**Comment** *nature of cost or benefit (eg, ongoing, one-off), evidence and assumption (eg, compliance rates), risks*	**Impact** *NZ$m present value where appropriate, for monetised impacts; high, medium or low for non-monetised impacts*	**Evidence certainty** *high, medium, or low, reasoning in comment column*
Households	Ongoing participating costs (time and transport). There is a time cost but the appropriate value to apply is household time is unclear	NZ$847	Medium
Producers (labelling costs)	One off changes, possibly avoidable depending on timing	NZ$10	Low
Container return facility operators (business, community, charities)	Ongoing – mix of reverse vending machines, over the counter and depots. Exact specifications unlikely to operate as modelled.	NZ$571	Medium
CRS PSO – operating	Ongoing PSO administration, material consolidation facility operations, export of materials. Based on similar CRS operating models	NZ$938	Medium/High
CRS managing – capital agency	Material consolidation facilities (MCF) One off (35 year life) with some short term assets (4 years) MCF locations uncertain	NZ$23	Medium
Total monetised costs		NZ$2.389 billion	Medium
Households	Ongoing from increased recycling and reduced litter, litter volunteers, avoided landfill costs. There is a welfare impact but monetising is imprecise	NZ$2994	Low
Councils/recycling contractors	Ongoing from litter clean up, kerbside collection savings, reduced contamination Assumes operating efficiencies	NZ$178	Medium
Environment	Ongoing emissions Assumes reduction in virgin material use	NZ$137	Medium
CRS PSO	Value of additional material recovery. Conservative current values as recycling markets are volatile	NZ$216	Medium/High
Total monetised benefits		NZ$3.524 billion	Medium

Notes to cost-benefit analysis and assumptions

314. The analysis uses the best information available. There are a number of unknowns, assumptions and judgments required, as set out in detail in the full report attached at Appendix 2 of this RIS.

315. The CBA provides economic benefit values for kerbside collection and associated disposal costs that sum to NZ$5.9 million per year. However, when including the estimated kerbside donated deposit value, the PwC financial model estimates the financial benefits to councils/recyclers to be in the order of NZ$40-50 million. It is therefore critical to not conflate economic and financial costs and benefits for the NZ CRS.

Overall summary of impacts of implementing a CRS, designed as proposed

316. On the basis of the analysis set out in this document, the Ministry has assessed a CRS as proposed as the most likely to:

- address the root causes of the beverage container recovery and litter problem, with the refundable deposit being a key incentive to improve waste practices across the value chain
- shift costs away from councils, ratepayers and the environment, and, instead, towards responsible parts of the supply chain (ie, beverage manufacturers, retailers and the consumers of beverages)
- not unfairly add costs to businesses, retailers and consumers
- align strategically with the waste strategy and complement other waste initiatives (particularly proposed changes to kerbside recycling)
- be achievable in the medium term.

317. Table 15 below sets out overall impacts by groups affected at a high level and including stakeholder feedback from public consultation (or otherwise).

Table 15: Summary of overall impacts of preferred option by affected group

	Cost	Benefit	Net impact	Evidence certainty
Affected groups	**Additional impacts of the preferred option compared to taking no action**			
Households	Additional costs to households when purchasing beverage containers (assuming 100% pass through from producers)[89] Households may seek to avoid additional costs by buying fewer products. A small reduction in product consumption may be expected to offset some or all of the addition costs associated with the scheme. Those households not returning beverage containers will not receive a refund (which may affect time poor families or those in rural areas) For those households returning containers, additional time and transport costs Scheme implementation is not expected to involve costs to households until 2026	Deposit refunded when container returned Ratepayer costs avoided due to less costs on local government in dealing with litter Efficient and convenient drop off points will enable most families to return containers easily Those buying or selling refillable containers will not be impacted, which may help to drive a shift to reusable/refillables (given refillables are proposed to be exempt) No impact on households purchasing fresh milk, given fresh milk is proposed to be exempt in all packaging types Better wellbeing as a result of improved community litter outcomes Building a stronger culture of recycling and good practice in New Zealand	Overall positive impact	Time and transport costs can be modelled (CBA) but wellbeing measures are less certain
Local government	Transitional costs such as contract amendments and kerbside service level changes (that will lead to savings)	Reduced kerbside and litter costs. Increased value of beverage containers 'donated' to kerbside recycling by residents who choose to forgo their deposit refunds (note: assumes a highly convenient return network is available to enable a genuine choice)	Overall positive impact	High – Scheme financial modelling suggests councils (and/or recyclers) with a CRS operating in their region will benefit overall

89 It is important to note that rather than absorb the additional net scheme fee costs, many consumers may simply purchase slightly fewer beverage containers in the year of scheme commencement as has been observed in Australian schemes. This market response leads to an impact for businesses.

	Cost	Benefit	Net impact	Evidence certainty
Affected groups	**Additional impacts of the preferred option compared to taking no action**			
Beverage producers	Transitional costs – Registering with the PSO, labelling, scheme fee start-up costs etc. Loss of sales at scheme commencement, modelled as a one off 6.5% reduction across all beverage container types[90] and expected to be recovered within three years Any producers involved in establishment of the PSO may also provide a loan facility to the PSO. Scheme fees (including any eco-modulation) will represent the impact of current container life cycle externalities, becoming an internalised cost Small producers with slower stock turnover may be more greatly impacted by scheme start-up costs, even with phased implementation Producers using packaging that is hard to recycle may need to consider alternative packing options	Scheme costs will likely be largely or completely recovered from consumers in time, noting container sales have grown rapidly. Producers are sensitive to customer preferences – There is evidence of a strong desire by producers (as communicated through marketing and industry communications) to be presenting packaging options to the market that are sustainable A CRS as proposed would enable container-to-container recycling at a scale in New Zealand that is unprecedented	Overall neutral or negative impact	Medium – The degree to which beverage producers may be impacted will depend upon the landed scheme fees and the degree to which any given producer is able to pass through scheme costs
Commercial recyclers (collectors and processors)	Loss of revenue from beverage container materials at kerbside (partially mitigated by exemption of fresh milk – natural HDPE is the second most valuable recyclable commodity). Compliance (administration audit) costs in obtaining deposit refunds from PSO	Councils and/or recyclers will benefit from the unredeemed (donated) deposits on beverages placed in kerbside. As affected recyclers largely operate through council contracts – and bias in costs and benefits to either party will likely net out Benefits from reduced contamination and reduced landfill costs (associated with both recycling and waste collection)	Overall neutral impact	Medium – The degree to which recyclers may be impacted will depend upon the landed negotiations with councils. Ultimately, if recycler costs increase, they will pass these onto councils

[90] Based on experience from similar Australian schemes, noting a different deposit level is proposed.

	Cost	Benefit	Net impact	Evidence certainty
Affected groups	**Additional impacts of the preferred option compared to taking no action**			
Charities, community groups and NGOs	Potential loss of revenue from container materials at community recycling centres	Significant opportunity to generate revenue from RVM donations, and through seeking to operate scheme depots (through receiving a handling fee for compensation) or, for those not participating in the network directly, fundraising drives as a part of the 'informal network', eg, collection points at schools, sports clubs	Overall positive impact	High – International evidence overwhelmingly supports the positive impacts of a CRS
Retailers and supermarkets	If mandatory return-to-retail is imposed, supermarkets or other regulated retailer take back points will have significant up-front costs to establish return facilities. However, if they so choose, supermarkets can deliver this as an outsourced service and in any case, are compensated by the scheme handling fee to cover reasonable costs Any retailers involved in establishment of the PSO may also provide a loan facility to the PSO	Supermarkets or any other regulated retailer take-back point/redemption centres will receive a per unit handling fee as compensation for collecting and sorting containers Subject to their investment model, if supermarkets choose to own their own infrastructure, they may see profits from the return facilities Consumer foot fall is also likely to increase and customer loyalty to 'good' container return facilities can see increased customers in retail stores	Overall – Neutral impact (initially negative, longer term likely positive)	Medium – The degree to which a retailer may benefit will ultimately depend on the scheme handling fee (to be set by the PSO) and the number of returned containers (and customers) it receives
Environment	While a return-to-retail network model would see relatively few 'new trips' for consumers, there would be additional vehicle movements for the recovery and transport of over 1 billion additional containers. A regulated network that leverages supermarkets may be able to utilise reverse logistics to reduce this impact. Electric light truck vehicles may also be appropriate in more densely populated settings	Significantly increased resource recovery enables increased (recycled content, lower emission) container-to-container recycling of beverage containers Significant litter reduction of beverage containers, with the likelihood of 'stadium effect', which is a reduction in other forms of litter with no other intervention. Reduced litter will have positive impacts on our wildlife and environment Reduced emissions by reducing the use of virgin materials in container manufacture	Overall positive impact	High – International evidence overwhelmingly supports the positive impacts of a CRS and associated litter reduction

Please see Appendix 2: Sapere Cost Benefit Analysis for impact analysis

Section 5: Delivering an option

How will the new arrangements be implemented?

Implementation details covered in this section

318. This is an updated interim RIS to support a decision to implement a NZ CRS, and for relevant policy decisions to inform drafting of primary legislation. A final RIS will be provided alongside advice (in the first quarter of 2023) including outstanding implementation matters that will not be covered in this RIS. This includes detail on compliance, monitoring and enforcement, governance of the PSO and other technical matters. A cost recovery impact statement (CRIS) and details of how the NZ CRS will be evaluated and reviewed will also be included in the final RIS.

Voluntary or legislated CRS

319. We have proposed the NZ CRS be industry led. However, we note the experience in other jurisdictions that industry is strongly incentivised to prioritise commercial over social good outcomes and subsequently drive down cost at the expense of attaining the outcomes sought from the scheme. Consequently, we do not consider a voluntary NZ CRS is appropriate.

320. Given the desire for an industry led scheme the focus in legislation has been on ensuring there are appropriate checks and balances to ensure the industry led scheme achieves the social good outcomes sought.

321. It is proposed that the NZ CRS will be enabled through a hierarchy of powers, obligations, roles and functions. Primary legislation will set out the broad framework for the scheme, and the functions, powers and obligations of the Minister, the Ministry for the Environment, the Product Stewardship Organisation (PSO) and other scheme participants.

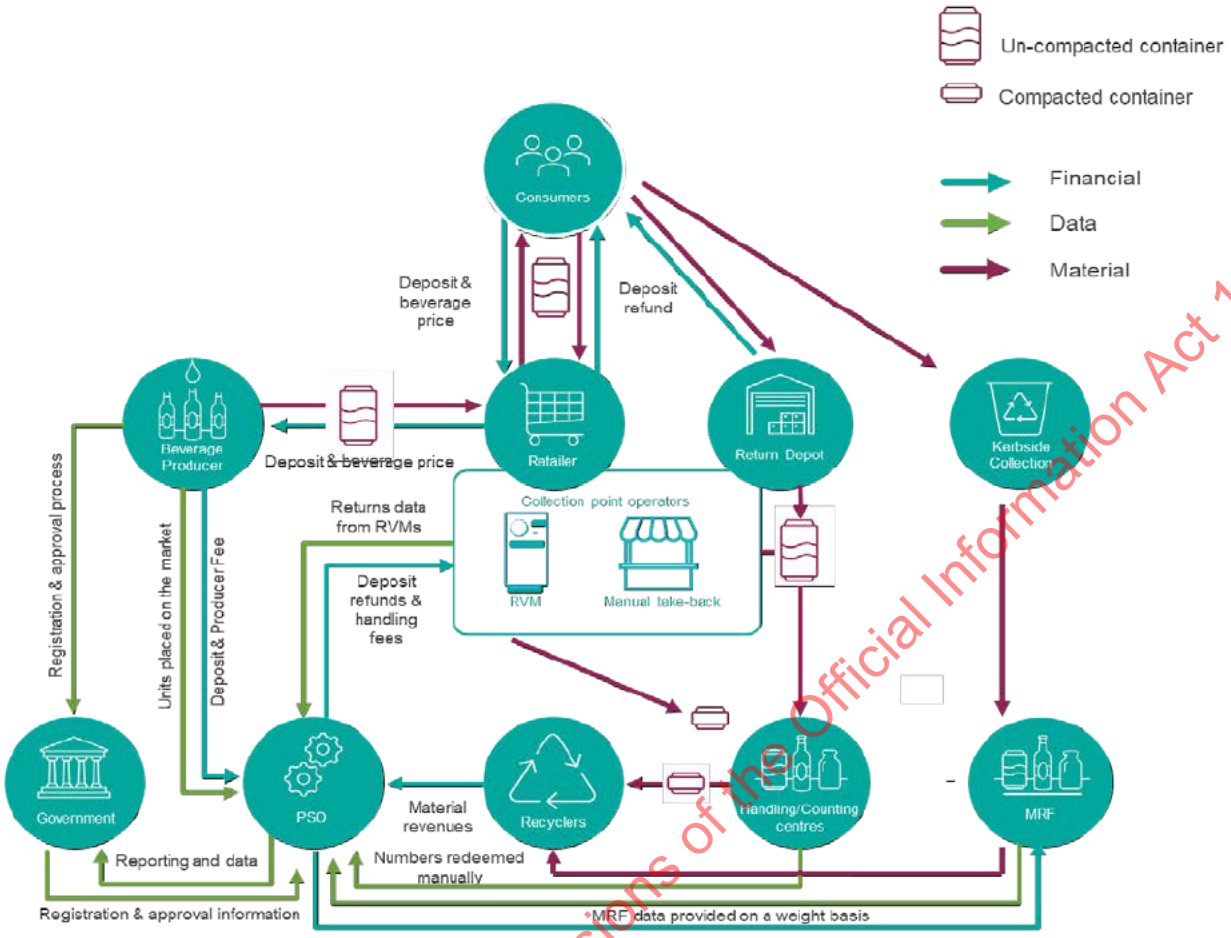
322. Regulations will address substantial decisions relating to the scope of the NZ CRS (including, for example, the refundable deposit amount, the types of containers to be included, excluded or exempt from the scheme and the return network parameters). Certain technical and administrative matters relating to scheme design and operations, data and reporting, and if needed, the input methodology for calculation of the scheme fee may be determined by the Secretary for the Environment. Appendix 4 shows the proposed split in responsibility between the relevant parties.

323. The intention is that the regulatory requirements will be developed in consultation with scheme participants to ensure that implementation is cost efficient and not overly burdensome.

Overview of a NZ CRS system

324. When operational, a NZ CRS will involve a system, with data, financial and material flows between a range of participants, as set out in the visual below (figure 5).

Figure 5 – Schematic showing the financial, material and information flows for an operational NZ CRS



Implementation Requirements for an operational NZ CRS

325. High level information about arrangements that will need to be put in place to implement a NZ CRS is set out in the table below, organised by scheme participant. The Product Stewardship Organisation (PSO) will play a key role. It is proposed that the PSO will be an industry led, not-for-profit organisation appointed by the Minister for the Environment.

Table 16: Implementation Requirements by Scheme Participant

Scheme Participant	Within a NZ CRS, responsible for:	Implementation requirements (in place by scheme commencement)
Product Stewardship Organisation (PSO)	Set up and operation of the scheme, including the beverage sale process, return network, financial systems, counting centres, recycling and processing of containers, and reporting	• PSO appointment • Regulatory requirements for the beverage sale process, return network parameters, the deposit level, counting and recycling requirements
Ministry for the Environment (or authorised party)	The set up and operation of the portal for beverage producers and importers to register their	• Set up of a registration portal[91]

91 See *Scheme implementation details – Registration Portal* for further details.

	beverage containers. Involves classification of containers into categories (approved for sale within the CRS, exempt and excluded from the CRS)	• Regulations, procedures and processes for approvals, exemptions and excluded containers
First responsible suppliers of beverages (producers/ importers)	Entering into arrangements with the PSO, registering within the portal and for approved containers, application of a refundable deposit, reporting of container volumes sold and payment of deposit of scheme fees to the PSO	• Minimum requirements for agreement with PSO • Education, information and guidance for registration, signage, labelling and reporting requirements • Set and registration procedures for the portal and financial system • Consideration of impacts on Trade and economic arrangements[92]
Retailers	Designated retailers will be required to enter into an agreement with the PSO, operate return points in return for a handling fee	• Network design parameters • Return point requirements (see below) • Refund arrangements
Return Point Operators	Retailers, depot operators and voluntary return point operators will take back approved containers from and provide a refund to consumers	• Return point requirements covering signage, refund types, storage of containers, data requirements
Councils and MRF's	Collects beverage containers through the kerbside system and collects refunds from the PSO	• Requirements for the counting of kerbside collected containers • Financial arrangements for payment of the refundable deposit for kerbside collected beverage containers
Recyclers	Will collect and process used beverage containers for Councils, and as required by the PSO	• Recycling/ processing requirements • Counting and storage requirements for kerbside collected containers
Consumers	Will return used beverage containers either via kerbside collections, or to a return point operator for a refund	• Education campaigns and guidance to encourage participation in the scheme

Specific implementation details – Industry loans

326. Establishment of a NZ CRS will be facilitated through industry loans to the PSO. These loans are estimated at $80 million and are modelled to be recovered within three years of scheme operation.

92 Further details on trade agreements such as the TTMRA will be provided in the final RIS.

327. The scheme financial costs, including loans, are recovered through scheme fees, which are in turn, expected to be largely passed through by beverage producers and retailers to consumers.

Specific implementation details – Classification of containers

328. It is proposed that the first responsible suppliers of beverage containers[93] to the New Zealand market would be required to register their containers through the Registration Portal, and these would be assessed by the Secretary for the Environment to determine the appropriate treatment (whether eligible, exempt, or excluded).

329. Those classified as eligible would be required to participate in the CRS. Those exempt from the scheme would be able to continue to sell their products outside of the CRS, but must provide information as required via the portal.

330. Excluded containers are those not eligible for participation in the CRS and not exempt. They will include containers made from materials or packaging formats that are more difficult to recycle and can end up as contamination in recycling streams, littered, or landfilled. This includes pouches, sachets, biodegradable plastic bottles, compostable packaging, and hard-to-recycle plastic types 3, 4, 6 and 7. These products make up a very small proportion of New Zealand's beverage container volumes.

331. To discourage producers from transitioning to unsuitable beverage container materials and packaging, excluded containers will be prohibited from sale, unless a temporary exemption from the prohibition is approved, to enable transition arrangements, or in emergency or unforeseen circumstances outside of normal scheme operations.

332. This proposal is consistent with current legislation applying to regulated product stewardship schemes, which will only allow products to be sold in accordance with a scheme. It is proposed that regulations will set out processes to ensure that producers are provided with appropriate guidance, and time to transition to more recyclable materials. Temporary exemptions to prohibition of sale can be used to manage emergency or unusual events, or where there may be significant costs or impacts on producers and/or importers of beverages that need working through.

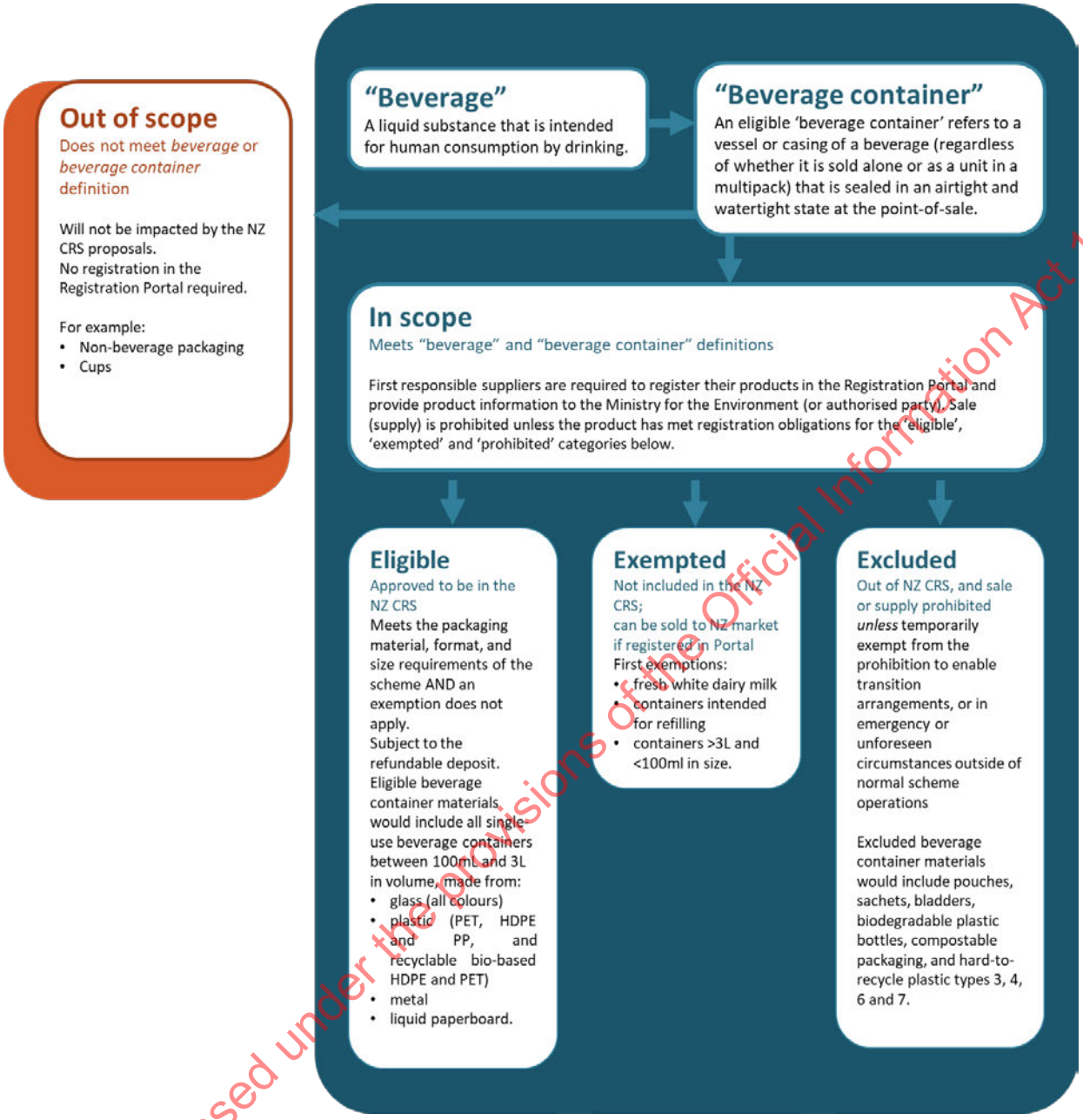
333. Sufficient lead in time will be provided as well as ongoing engagement to ensure industry is well-informed ahead of any new requirements and where appropriate, affected parties may be provided with a grace period to manage the transition to recyclable containers. Legislation is expected to pass in the first quarter of 2025, followed by an 18 month period before the scheme commences, where the scheme would be set up.

334. Suppliers of products that fall outside of the definition of beverage container are outside the scope of the CRS would not be impacted by these proposals.

335. A summary of the approach to the scope of containers in the NZ CRS is provided in figure 6 below.

[93] Beverage is defined as a liquid substance that is intended for human consumption by drinking. Beverage container is defined as vessel or casing of a beverage (regardless of whether it is sold alone or as a unit in a multipack) that is sealed in an airtight and watertight state at the point-of-sale.

Figure 6: Classification of containers process diagram



Specific Implementation Detail – Registration Portal

336. It is proposed that the Government will set up and operate a Registration Portal to enable individual beverage producers and importers to register details of their products and container types.

337. It is proposed that the portal will be operated by the Ministry for the Environment or an alternative authorised party. Three options for implementing the registration portal are:
    - Option (1) – setting up a bespoke portal solely for the NZ CRS;
    - Option (2) – leveraging an existing portal operated by one or more Australian states (with a harmonisation project to combine existing portals within Australia currently underway);
    - Option (3) – sharing a portal with other product stewardship schemes.

338. The relative merits of the above options (including cost) will be assessed prior to setting up the portal, which is expected to occur in 2025.

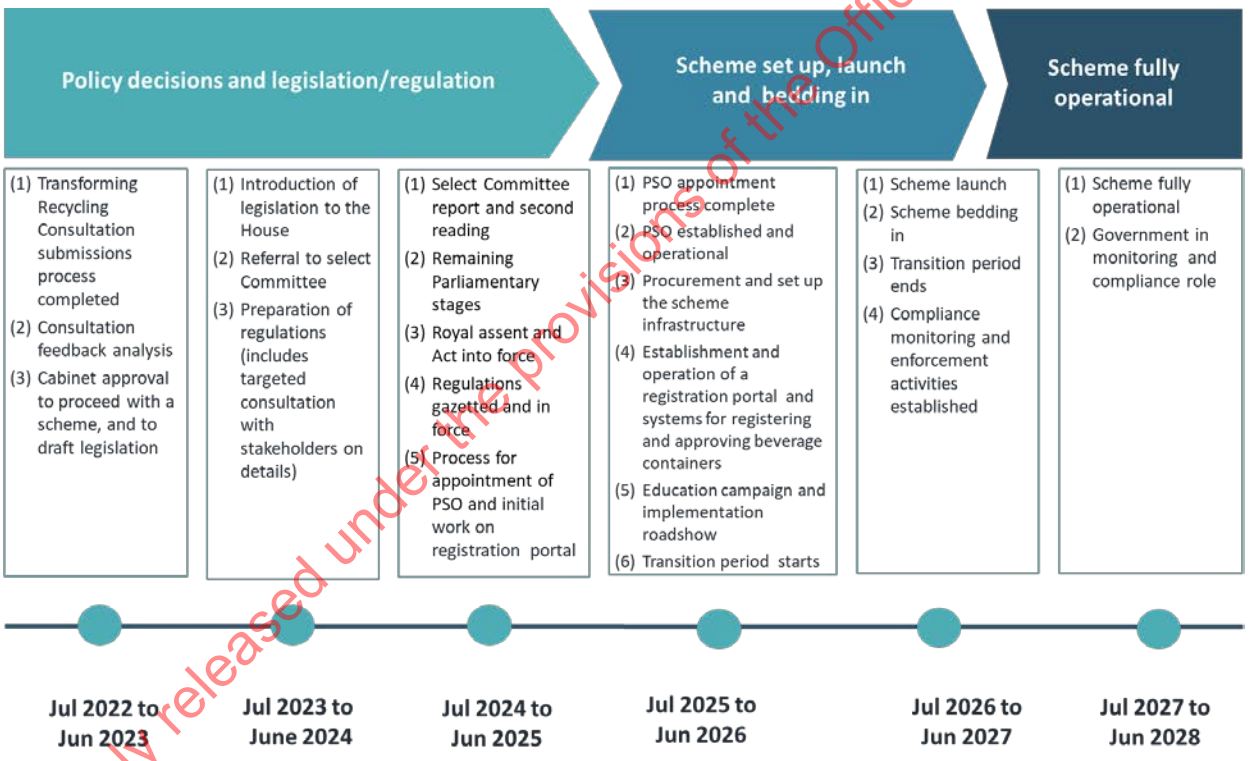
Specific Implementation details - impacts on New Zealand's Trade and Economic Arrangements

339. Obligations under the Trans-Tasman Mutual Recognition Agreement (TTMRA) will need to be considered during the design and implementation of a NZ CRS. The TTMRA requires goods that are able to be legally sold in Australia are also legally able to be sold in New Zealand, without having to comply with the destination jurisdiction's sales requirements. It is likely that New Zealand will need to seek a TTMRA exemption to ensure that beverage products from Australia are subject to the NZ CRS. Further details will be provided in the final RIS, following engagement with MBIE and MFAT.

What is the timeframe for implementation?

340. It is expected that if approved, and subject to new waste legislation in the first quarter of 2025, a NZ CRS will be operational by 2026. Implementation will require three phases, with high level activities required to implement set out in the visual (figure 7) below.

Figure 7: Implementation Timeline



What are the implementation risks? How will these risks be mitigated?

341. Risks and mitigations with respect to the implementation of a NZ CRS are set out below (table 17).

Table 17: Implementation risks and mitigations

Risk	Mitigation
Timeframes for implementation are ambitious and may slip, or change, causing uncertainty for industry.	Regular updates will be provided to industry stakeholders on timeframes for implementation during regulation drafting.
Opposition to the scheme or its design on the part of industry players, which may result in litigation[94]	Regular communications with industry players to reduce risk of litigation and flush out issues early. Ensuring decision making processes (including the appointment of the PSO) follow due process, with legal and procurement review. Provision for litigation risks when budgeting for the scheme.
Opposition to the treatment of excluded beverage containers (cannot be sold or supplied on the New Zealand market, unless a temporary exemption to the exclusion is applied)	Sufficient lead in time will be provided as well as ongoing engagement to ensure industry is well-informed ahead of any new requirements and where appropriate, affected parties may be provided with a grace period to manage the transition to recyclable containers. Legislation is expected to pass in the first quarter of 2025, followed by an 18 month period before the scheme commences.
The balance between governance and regulatory settings is not set at the right level, resulting is the NZ CRS not performing well.	CRS expertise to support regulatory design.
Limited awareness and preparedness amongst stakeholders (particularly retailers, community groups, smaller beverage producers etc).	Provide guidance (docs/webinars) on roles, responsibilities and provide resources where necessary.
Changes in beverage container production or consumption, or recycling markets.	Enable review of the scheme once operating with the ability to make changes in regulations and adjust scheme if necessary.
Inconsistency with trade obligations.	Consideration of New Zealand's international trade obligations, to ensure the proposed scheme's design and implementation is consistent with New Zealand's obligations. Consultation with industry on proposed changes will be undertaken.

94 In Australia and Scotland, there has been litigation with respect to the implementation of a CRS.

How will the new arrangements be monitored, evaluated, and reviewed?

Monitoring and Intervention Powers

342. Monitoring of the performance of a NZ CRS will be the responsibility of the Minister for the Environment and the Ministry for the Environment.

343. Given the industry-led nature of the scheme and the potentially profound negative impact a poor performing PSO may have on attaining outcomes, it will be important that the Minister can ensure that the PSO is being governed and run in a manner that supports an effective, efficient NZ CRS.

344. It is proposed that in the event of scheme performance being poor, the Minister may have powers of intervention. This will enable the Minister to appoint a Crown review team to identify and assess the extent of any problem(s) and make recommendations to the PSO and/or Minister for improvements. The Minister's powers will also enable the Minister to appoint a Crown manager to work with, or in place of, the PSO Governance Board should such a step be warranted.

345. As a last resort, if the PSO or its Board are unable or unwilling to perform in a manner that meets the Minister's expectations to attain the outcomes sought by the scheme, the Minister may dissolve the PSO Board, taking on the assets and liabilities of the PSO. Further details about how these intervention powers will operate will be included in the final RIS.

346. As part of the oversight of a scheme, the Ministry for the Environment will work closely with the PSO to ensure that the scheme is running smoothly. In addition, legislation or regulations would set out annual reporting requirements for the PSO to fulfil. Details of the proposed intervention and reporting powers and obligations is set out at Appendix 4.

347. Compliance, enforcement, evaluation and review arrangements will be dealt with in the final RIS. Considerations of cost recovery will also be dealt with in the final RIS.

Appendix 1: Preliminary Tiriti o Waitangi Analysis

Please note the analysis below is preliminary and will be updated and finalised within the final CRS RIS.

1. The NZ CRS proposals broadly align with a te ao Māori perspective, as the scheme seeks to address waste and improve outcomes both for people and the environment, which are inextricably linked through kaitiakitanga.

> *Kaitiakitanga speaks to the notion that nature and culture cannot be separated. Our role as kaitiaki requires us to protect and nurture our environment and it will in turn protect and nurture us. Kaitiakitanga requires a reciprocal and balanced relationship with our natural world. Everything is inter-related and mutually dependent.*
>
> *Our health and wellbeing is inextricably linked with the health of our environment. If the land and sea is polluted, then the health of the people will be affected as will the mana of the iwi. Waste impacts the health of our environment; through toxic leeching, microplastics, etc. Without a healthy environment that can sustain us, we are under threat.* – Ngāti Whātua Ōrakei submission

2. The greatest anticipated impact for Māori interests are likely to be through improving litter outcomes on land, in waterways and marine environments, as well as reducing emissions.

> Ko Aotearoa Tēnei
>
> *Kaitiakitanga linked to rangatiratanga*
>
> Kaitiakitanga in practice is usually linked to resource management, which can be linked to minimising or avoiding the unnecessary waste of natural resources. Beyond this 'waste' commonality, the WAI262 report further establishes kaitiakitanga as a form of exercising rangatiratanga. Therefore kaitiakitanga, in the instance of protecting environments, rivers and species from beverage container litter, is not only about ensuring the desired outcomes are achieved but also about *how* Māori can have effective influence and appropriate priority to enact kaitiaki interests in the scheme.

Consultation feedback overview

3. The *Transforming Recycling* consultation received two submissions from self-identified iwi groups: Ngāti Whātua Ōrākei and Te Rūnanga o Ngāti Whātua. Further submissions that spoke to how the scheme impacts Māori were received from Para Kore, Ngā Rangahautira Māori Law Students' Association, the Kiwi Bottle Drive and Greenpeace form submission and several councils. Key feedback from these groups included;

   - asserting that a NZ CRS broadly aligns with te ao Māori worldviews
   - ensuring that the CRS is inclusive and accessible for those in rural and low-income communities
   - ensuring opportunities for iwi/hapū/whānau involvement in the return network
   - including iwi/hapū/Māori representation in the governing body of the scheme to ensure the CRS is implemented and developed in a way that embodies Te Tiriti and reflects te ao Māori.

4. The analysis below centres on two of the three principles of Te Tiriti relevant to this work at this stage – partnership and active protection - as per the Ministry for the Environment's Tiriti analysis guidance. Feedback from the *Transforming Recycling* consultation is integrated where possible.

Partnership

Māori engagement in the CRS co-design project

5. Policy work on a CRS has been underway since the end of 2020, upon the completion of the CRS co-design project. The co-design project was an externally-led project (led by Marlborough District Council and Auckland Council) to develop a preliminary design for a NZ CRS, incorporating the iterative feedback from stakeholders in the Scheme Design Working Group (SDWG) and a Technical Reference Group.
6. Given the scheme is proposed nation-wide and not specifically focused in any particular region or rohe, no specific iwi have been directly engaged in the development of the CRS design proposals to date. Māori engagement in the CRS process thus far includes Para Kore's participation and contributions in the CRS co-design SDWG. The SDWG's individual and collective feedback was delivered to the Ministry in a series of research tranches and a final report, which formed the basis for the Ministry's policy work on a NZ CRS in late 2020.

Transforming Recycling consultation

7. Proposals for the NZ CRS were included in the *Transforming Recycling* public consultation, held in March – May of 2022. We received well over 6000 submissions, including nearly 4000 form submissions from the Kiwi Bottle Drive and Greenpeace.
8. We acknowledge that consultation was not specifically targeted to enhance Māori engagement. Further, the timing of consultation announcements did not align with usual channels for wider Māori engagement. However, particularly valuable submissions were received from Ngāti Whātua Orākei and Te Rūnanga o Ngāti Whātua as well as Para Kore and Ngā Rangahautira Māori Law Students' Association.
9. In light of submissions feedback, and subject to Cabinet's decision to implement a scheme, we recommend that the Ministry actively provide further opportunities for engagement with Māori groups (whether iwi/hapū or wider representative groups such as Para Kore), should any of these groups wish to engage, throughout the implementation, development and review of the NZ CRS. Further detail will be provided in the final CRS RIS.

Rangatiratanga

10. Rangatiratanga underpins the importance of Māori providing advice on matters that affect Māori.
11. We note that the NZ CRS is purposefully designed to put the cost, responsibility and delivery of a beverage CRS on industry. The proposed NZ CRS therefore does not include provisions for a co-governance model of a scheme. However, there are several ways to allow for requirements for the outcomes of the scheme to be equitable for Māori, such as requirements for the appointment of the scheme's product stewardship organisation. These are outlined below and will be developed and included in the final RIS.

Active protection

12. The Crown has an obligation to ensure that Māori interests are protected when making a policy, including the active protection of the natural environment on which Māori people and their tikanga, particularly kaitiakitanga, depend.

Protection of Māori interests

> *As a concept, waste does not align with Mātauranga Māori, the Māori world view. Waste is a symptom of us being out of balance with te taiao and te Aturoa. It does not respect our relationship with nature, nor does it reflect our role as kaitiaki.*
> – Ngāti Whātua Ōrākei submission

13. The accompanying Cabinet paper to this RIS seeks Cabinet's agreement to implement a NZ CRS. Engagement, feedback and analysis to date indicates that a NZ CRS and its outcomes, as proposed, strongly align with te ao Māori worldviews. The greatest anticipated impact of a NZ CRS for Māori interests will be through improving litter outcomes on land, in waterways and marine environments, as well as reducing emissions. A more ambitious scheme that seeks to design out waste entirely would further align with te ao Māori worldviews and practices.

> *As a concept, waste does not align with Mātauranga Māori, the Māori world view. Waste is a symptom of us being out of balance with te taiao and te Aturoa. It does not respect our relationship with nature, nor does it reflect our role as kaitiaki.* – Ngāti Whātua Orakei submission– Ngāti Whātua Ōrākei submission

14. Submission feedback from Para Kore notes that the best to incorporate te ao Māori into the scheme is to "create partnerships with Māori at the governance, management and operational levels".

Anticipated impacts for Māori

15. It will be important to ensure the scheme is accessible and for Māori living in rural areas and with lower-incomes to ensure the deposit can be reclaimed.
16. Given the scheme will be nation-wide and not focused in any one region or rohe, no specific iwi or hapū are expected to be more affected by the scheme. Unintended impacts may disproportionately be felt by Māori in the rural and lower-income demographics, who may face barriers in accessing return points due to remote location or limited access to transport.
17. 18% of Māori in Aotearoa New Zealand live in rural areas and 14.7% live in small urban areas. Some iwi/hapū will have higher proportions of rural populations than others. It will be important to make the scheme as convenient and accessible as possible (ie, with many return points), particularly in rural areas. The NZ CRS proposal being put to Cabinet includes a 'mixed model' return network including both retail and depot return points, with requirements for retailers to 'take back' beverage containers eligible in the scheme – this proposed scheme design is to ensure an ambitious convenient scheme is implemented.
18. The Ministry is undertaking further modelling work and geospatial analysis on how the return network is best optimised to make the scheme as accessible and equitable as possible for people living in urban and rural settings. This modelling will inform the criteria for any potential exemptions under the proposed mandated take-back obligations. If key areas/rohe are identified that may need targeted return set ups, it would be advisable to engage with the affected iwi/hapū as needed.
19. Further, and reflecting submissions feedback, it would be valuable to include a targeted awareness campaign for Māori to support the uptake of the scheme, enhance Māori participation in the scheme operations, and to mitigate the risk of people not claiming the deposit refund and unintentionally bearing extra costs.
20. There will also be opportunities for Māori participation in the scheme. Through the proposed mixed-model return network, the scheme would include opportunities for depots.

Recommendations for the NZ CRS Proposals

21. To address the above, and to take submission feedback into account, the Cabinet paper proposes that:

- The scheme's product stewardship organisation (PSO) 'appointment criteria' will require applicants to demonstrate how the outcomes of the scheme will be equitable for Māori. Noting that a CRS is purposefully designed to put the cost, responsibility and delivery of a CRS on industry;
- the CRS Design Standards will require the PSO to demonstrate, on the basis of advice from Māori, how it is supporting Māori participation in the return network and ensuring equitable access to the benefits of the scheme (including access to return points);
- at regular intervals, the Ministry for the Environment (or authorised third party) will review whether the PSO is meeting its obligation to ensure equitable outcomes of the scheme are being met for Māori.

22. Proposals for scheme governance and further details regarding the return network and meeting Crown obligations for Māori (including how the scheme could provide for Māori participation) will be provided in a subsequent paper in the first quarter of 2023, following further geo-spatial modelling, Ministry analysis and engagement with Te Arawhiti and other relevant groups.

Appendix 2: Cost-benefit Analysis (Sapere Research Group)

Appendix 3: Additional information on the scope of containers

Plastic beverage containers

1. PET, HDPE, and PP are conventional packaging plastics that are higher value plastic types with growing onshore reprocessing capacity, and good markets both onshore and overseas. The two main plastic beverage container materials are PET and HDPE. While PP is less commonly used, it is proposed to be in included because it is easily recyclable and is used for some beverage container lids and caps.

2. Plastic beverage containers are included in nearly all (approximately 96%) overseas container return schemes. Most plastic beverage containers are highly recyclable and have stable onshore or offshore recycling markets. A CRS is an opportunity to recover cleaner, separated plastic beverage container material. This would deliver higher quality recyclable products to market with a higher commodity value and also reduce littering of plastic beverage containers in our environment.

3. Including the proposed plastics in a NZ CRS would:
    - increase the low recovery and recycling rates for plastic beverage containers
    - reduce plastic beverage litter and associated clean-up costs
    - increase the quality of plastic collected for recycling
    - address the high market demand for high quality plastic
    - support the viability of increased onshore domestic processing
    - align with recent decisions to phase out certain hard-to-recycle plastics
    - create a level playing field for all beverage producers
    - create a convenient and simple scheme for consumers and businesses to use.

Sales and recovery of plastic beverage containers in Aotearoa New Zealand

4. In 2020/21, approximately 587 million beverages in plastic containers were sold in the New Zealand market. Of this, fresh milk and cream accounted for 177 million plastic containers, followed by carbonated beverages (147 million plastic containers) and water (115 million plastic bottles).[95] Available data suggests only 33% of these plastic containers were recovered for recycling in 2019.

5. Introducing a CRS that accepts all single-use plastic beverage containers would see increased recovery of plastic beverage containers for recycling, alongside significant litter reduction and improved recycling outcomes. Quality separated plastic materials can achieve over NZ$200 per tonne for PET and up to NZ$850 per tonne for natural coloured HDPE.

6. Kerbside recycling audits from 2019 show that households recycle 81% of PET and 86% of their HDPE beverage containers at home. Therefore, even a kerbside recycling system with 100% recovery has limited maximum potential for recovering plastic beverage containers, which further underscores the rationale for a CRS alongside wider improvements to kerbside collection systems.

Forecasted consumption of beverages in plastic containers and increase in domestic reprocessing capacity

7. New Zealand's onshore domestic plastic reprocessing and recycling industry is growing, driven by increasing volumes of virgin materials and plastic products entering the

95 GS1 and PwC New Zealand beverage sales data, 2022.

domestic market and increasing consumer demand for better (environmental) outcomes associated with products made from plastic.

8. Relative to the size of the market opportunity (virgin materials imports[96]), onshore processing and manufacturing for recycled content is only just getting started in Aotearoa New Zealand. In order to grow, onshore plastic reprocessing and recycling industry needs systems that recover clean, separated, materials.

Bio-based HDPE and PET

9. There are some bio-based[97] plastic beverage containers in circulation on New Zealand's market (for example, plant-based plastic water bottles or milk bottles). Bio-based plastics can be made to be either recyclable or compostable, but they cannot be both. Unfortunately, these bottles can look identical to other plastic bottles and often end up contaminating recycling systems (or, conversely, composting plants) by mistake.[98]

10. While bio-based plastics are currently a relatively small portion of New Zealand's beverage container market, recyclable bio-based PET and HDPE beverage plastics are proposed to be included in the NZ CRS because these materials are compatible with conventional recycling systems.

Metal beverage containers

11. Metal beverage containers are included in nearly all (94%) overseas container return schemes. This is mostly aluminium cans, but some schemes also include lower value ferrous metals. Recycled aluminium has high demand and is a valuable commodity; prices vary but are typically around NZ$1,200 per tonne, making it the most valuable beverage container material.

Sales and recovery of metal beverage containers in Aotearoa New Zealand

12. In 2020/21, approximately 823 million containers – or about 32% of total beverage containers sold – were made out of metal, mostly aluminium. Carbonated beverages were the most sold beverage in metal containers, with about 394 million sold, or 48% of total metal beverage containers (equating to 15% of all beverages sold). Alcoholic drinks (including beer and spirit-based drinks) accounted for another 299 million containers, or 36% of metal beverage containers sold (11% of all containers).

13. In 2019, existing systems recovered less than half (estimated 45%) of metal beverage containers sold. Including metal beverage containers in a CRS could significantly increase this recovery rate to upwards of 85%.

14. In addition, current trends suggest that the use and consumption of beverages in aluminium cans will continue to increase. Between 2018/2019 and 2020/2021, there was a significant increase (45%) in metal (aluminium) container sales in New Zealand.

15. Given aluminium cans are a valuable commodity, highly recyclable, reduce emissions when recycled and have good circular potential, eco-modulation of the scheme fee

96 In 2019, New Zealand imported 575,000 tonnes of plastic resin and plastic materials. Source: Prime Minister's Chief Science Advisor, 2019. Rethinking Plastics in Aotearoa New Zealand.

97 Just as conventional plastics are fossil fuel-based, bioplastics are made from plant materials (or a combination of plants and fossil fuels). For example, PET and HDPE plastics can both be made from biobased materials and can be recycled in conventional recycling systems, such as Ecostore's recyclable plastic bottles, which are sugar cane-based HDPE.

98 Note: Capturing compostable and biodegradable materials is not a key policy objective of reducing litter and increasing recycling of beverage containers.

would likely mean those using aluminium packaging could have their scheme fees modulated (reduced) as an incentive towards this highly recyclable and lightweight commodity.

Glass beverage containers

16. Glass beverage containers are included in most (approximately 87%) of overseas container return schemes, including all Australian schemes. Glass accounted for about 41% of all beverage containers sold in New Zealand in 2020/21.

17. The large glass/alcohol industry associations oppose inclusion of glass in a CRS. As such, the Ministry's CBA has previously modelled this option. The CBA demonstrates that excluding glass containers from the scheme would significantly reduce the overall benefits of a CRS, due to the size of the glass market. In a NZD 20 cent deposit scenario and over a 30 year time horizon, the benefit-cost ratio (BCR) dropped from 1.61 for a 'glass-in' scheme to 1.10 for a 'glass-out' scheme. Net benefits dropped from NZ$1.39 billion (glass-in) to NZ$167 million (glass-out).

18. Including glass beverage containers in a NZ CRS would:

    - increase our recovery and recycling rates for beverage glass, including new market drivers to help address recovered glass market issues (eg, eco-modulation and refillable targets)
    - reduce glass beverage litter and associated clean-up costs
    - reduce contamination of glass in kerbside collections
    - reduce the cost of kerbside collections for ratepayers and councils
    - create a level playing field for all beverage producers
    - create a convenient and simple scheme for consumers and businesses to use.

Sales and recovery of glass beverage containers

19. Glass was the most sold beverage container type (approximately 994 million containers) in New Zealand in 2020/21. Glass was the also the most littered beverage material in 2019, representing 51% of beverage litter items by count. Beer bottles represented the largest proportion of national litter weights in 2019.[99]

20. In 2018/19, New Zealand's recovery rate for glass was 60% (upper figure), and the bottle-to-bottle recycling rate was 48%. As a proportion of total glass beverage containers to market, kerbside recovery levels for glass have declined slightly in 2020/21 for many councils. Comparatively, CRS glass recovery is typically over 80% in Europe and in Canada.

New Zealand market demand and oversupply of glass for onshore processing

21. New Zealand has one glass bottle manufacturing plant in Auckland. Currently, New Zealand has stable market demand for glass to the point where our onshore processing and manufacturing capacity is exceeded; approximately half of the glass beverage product sold into the market every year can be recovered and processed into new bottles (bottle-to-bottle recycling).

22. The additional volume of recovered glass that is not able to be remade into new bottles is in excess supply, with limited alternative onshore market opportunities that are sustainable. Manufacturing glass is very carbon intensive; using the oversupply as a

99 Keep New Zealand Beautiful (KNZB), 2019. National Litter Audit.

substitute for aggregates or simply stockpiling the glass has carbon implications and limits its circularity.

23. The existing furnace capacity of the manufacturing plant could be more effectively utilised and more glass could be recycled into new bottles if the quality of glass recycled was improved through a CRS and/or through improvements to kerbside. However, the gains would be limited if other proposed drivers enabled by a CRS (eg, eco-modulation fees and targets for refillable beverage containers), aren't also approved.

24. A key risk with the CRS 'glass-out' scenario is the potential to incentivise more producers to switch to glass from more recyclable packaging formats (eg, aluminium) to avoid CRS refundable deposits being applied to the face value of those products. With New Zealand's onshore furnace capacity limited to approximately half of all glass sold, this would exacerbate the existing oversupply issue.

25. Potential solutions for the glass oversupply issue include:

    - recycled content requirements for all glass containers, not just those produced in New Zealand
    - development of alternative end-markets for bottle-to-bottle recycling (offshore if necessary)
    - investment in increased domestic reprocessing capacity (noting that the South Australian market could potentially take much of New Zealand's surplus glass)
    - the application of an eco-modulation fee to incentivise the market (to shift towards other recyclable materials, and/or improve demand for higher recycled content NZ glass)
    - a shift to refillable (lower carbon) glass containers.

Pre-consultation stakeholder views on glass in a NZ CRS

26. Some industry participants are opposed to including glass in a CRS. This includes the Glass Packaging Forum (GPF), which has proposed that glass be declared a priority product in order to make its scheme a regulated (mandatory) product stewardship scheme under the WMA 2008. This would mandate participation in the GPF's scheme for New Zealand producers and importers of beverage and non-beverage products in glass containers (ie, bottles and jars).

27. Other beverage industry stakeholders strongly support glass being included in a CRS, in particular, non-glass and non-alcohol beverage industry stakeholders, and some craft brewers (who tend to favour cans and kegs). This position is primarily taken because not including glass in a scheme would create a very unequal playing field within the beverage industry.

28. In response to the glass industry's advocacy on a 'glass out' CRS, in 2020, approximately 65 New Zealand (largely non-government) organisations signed a collective letter calling for a CRS that includes glass.[100]

Liquid paperboard (LPB) beverage containers

29. LPB is a composite and hard to recycle multi-material packaging made from plastic, aluminium and fibre. It has an important role in the packaging of aseptic, long-life, shelf-stable products, including UHT (long-life) dairy milk, plant-based milks and juice. LPB containers are included in less than half (38%) of schemes globally and is commonly included in Australian and Canadian schemes.

100 https://www.osof.org/wp-content/uploads/2021/05/Open-letter-in-support-of-a-comprehensive-CRS.pdf

Sales and recovery of LPB beverage containers

30. LPB accounted for a relatively small proportion (7%) of our domestic beverage container market in 2020/21 (approximately 167 million LPB beverage containers were sold). However, the use of LPB beverage containers has grown rapidly in New Zealand, with a 14% increase between 2018/2019 and 2020/2021.

31. Currently only two councils collect LPB at kerbside, leaving much of the approximately 8,000 tonnes of LPB packaging material to go to landfill. Where LPB is recovered through kerbside, it is unclear whether it is treated as contamination (waste), or if it is able to be recycled offshore. LPB cartons are hard to recycle as the container is a composite, multilayer material made from a combination of fibre (cardboard), plastic and aluminium. These materials are not easily separated for recycling. Recycling LPB is possible but requires scale and energy-intensive processing technology to separate out the materials, which New Zealand does not currently have. As a result, LPB cartons end up in landfills or, at best, are downcycled onshore into other products.

32. Given that recovery through kerbside collection services for LPB is limited, and that the Minister for the Environment is separately proposing to remove LPB from all kerbside recycling collections across New Zealand, it is appropriate that LPB be included in a regulated product stewardship scheme, such as a CRS, to ensure these materials are recovered.

Out of scope containers

Non-beverage packaging

33. Overseas, most schemes do not include non-beverage products, such as kitchen and laundry products (eg, detergents), garden shed products (eg, garden sprays) and bathroom products (eg, shampoos).

34. In New Zealand, non-beverage glass (jars and bottles) and metal (cans and tins) are a relatively small proportion of New Zealand's recycling stream by weight. Non-beverage containers are not commonly found in the litter stream because, similarly to fresh milk, these products are commonly consumed at home and are captured through kerbside recycling. Non-beverage food grade plastics containers such as ice cream and margarine tubs are also not commonly found in the litter and are usually consumed at home or in commercial premises.

35. Non-food grade plastic containers (such as those containing kitchen, bathroom, laundry, garage and garden products) typically contain chemicals. Not including these types of products also ensures CRS materials are of higher, food grade quality, which have a higher market value, and are therefore more likely to remain in closed-loop (container-to-container) recycling systems.

36. The Government has several key commitments underway to address non-beverage packaging:

    - standardising kerbside recycling, which captures most 'non-beverage' packaging materials
    - phasing-out some hard-to-recycle packaging plastics
    - declaring non-beverage plastic packaging as a priority product for a regulated product stewardship scheme
    - investing in onshore recycling plant technology through the NZ$124 million Covid-19 Response and Recovery Fund investment
    - the NZ$50 million Plastics Innovation Fund.

Cups

37. Single-use cups and coffee cups were not proposed to be included in the CRS, because they do not meet the proposed definition of a ‘beverage container’ (ie, they are not sealed in an airtight and watertight state at the point-of-sale).
38. In response to the feedback received through public consultation on proposals to phase out certain plastics, a parallel work programme is underway by the Ministry to coordinate sector experts and inform a plan for single-use cups and coffee cups, including possible options for phasing out these cups by 2025.

Appendix 4: Roles, Responsibilities and Powers

Minister for the Environment

Sets regulations

Makes regulations on:

- final deposit level (10 cent minimum specified in legislation – minimum legal tender for a cash payment) and powers to set effective deposit level in regulation
- parameters for retail take-back obligations and exemption criteria
- specific categories of containers - eligible, exempt or excluded from a CRS (including making additions to deal with new container types and temporary exemptions to excluded containers for transition or emergency purposes)
- mandatory return rate targets
- definitions of recycling/processing requirements
- eco-modulation of scheme fees
- exemptions for digital requirements for counting containers
- sets transition arrangements (eg for old stock)

Establishment powers

- Will call for proposals and appoints the PSO on advice from the Secretary for the Environment

Monitoring and Intervention Powers

- May request reports/ information from PSO
- May require the PSO to replace an existing handling fee with a fee specified by the Minister
- May add to the approved list of charity types

Where scheme performance issues arise, may:

- appoint a Crown review team to make recommendations for improvements
- appoint a Crown Manager to work with or in place of the PSO Governance Board
- dissolve the PSO Board, taking on the assets and liabilities of the PSO and vesting these in a Crown Entity Company
- take over and manage assets of the EPRO and make changes to the Board

Review

- Review the operation of the CRS after 3 years

Secretary for the Environment (or authorised agency)

Sets Detailed Requirements

Secretary issues determinations relating to:

- *Information Disclosure Requirements*
- *CRS Design Standards* (includes requirements for return points, voluntary network, refunds to charities, fraud mitigation for kerbside collected containers, registration and approval details)
- *Input methodologies* – if necessary, the ability to specify the methodology the PSO will use for setting scheme fees

Establishment responsibilities

- Sets criteria for PSO appointment (following consultation with the Minister) and provides advice to the Minister

Registration and approval of containers

- Establishes/operates registration portal and categorises containers as eligible, exempt or excluded in accordance with regulations.
- Approves containers for sale in the CRS.

Monitoring of CRS performance and advice

- May appoint auditors to assess compliance and performance of the PSO
- May provide advice to the Minister about replace an existing handling fee with a new fee
- May provide advice about container categories
- Will monitor scheme performance and provide advice to the Minister (including on how the PSO is providing for outcomes for Māori and re allocation of refunds to charities)

Intervention

- May intervene if the PSO is not providing for a fair, transparent and equitable allocation system for charity refunds via RVMs

Product Stewardship Organisation

Establishment of the NZ CRS

- Secures funding, sets up corporate office, systems and procedures
- Enters into arrangements with producers/importers/return network operators/Councils
- Sets up the return network and transport logistics
- Procures counting and consolidation facilities and enters into arrangements for recycling of containers

Ongoing scheme operation

- Manages and co-ordinates the CRS in compliance with regulations and standards/requirements set by the Secretary for Environment
- Collects deposits and scheme fees from producers/importers
- Pays handling fees to return point operators
- Sets the scheme fee (and eco-modulates the fee in accordance with regulations)
- Makes arrangements for payment of refunds directly or indirectly via return point operators (including in relation to containers collected at kerbside and to charities)
- Manages the counting and consolidation sites
- Arranges for transport, recycling/processing of containers (including lids)
- Collects information from scheme participants

Reporting and advice

- Will provide regular reporting as set out in the *Information Disclosure Requirements* (including as against scheme targets)
- Will provide advice to the Secretary for the Environment on container categorisations
- Provides with Minister with an assessment of scheme performance, financials and forward projections