Consultation document

Te panoni i te hangarua
Transforming recycling

Container Return Scheme

Improvements to household kerbside recycling

Separation of business food waste

Ministry for the Environment
Manatū Mō Te Taiao

Te Kāwanatanga o Aotearoa
New Zealand Government

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Message from the Minister

Catching up with the rest of the world

New Zealand generates more than 17 million tonnes of waste each year, and we send almost 13 million tonnes of that to landfill. Our recycling rates are low compared to other countries, and we have too much litter.

Of the materials New Zealanders place out for kerbside collection, only about one-third is recycled and composted. Around two-thirds are sent to landfills. In better-performing countries it is the other way around.

Another major problem is that too much rubbish goes into recycling bins, and too many recyclables go into rubbish bins.

New Zealand households incorrectly dispose of 178,000 tonnes of material at the kerbside each year.

70,000 tonnes of rubbish are placed in recycling bins contaminating the recycling. 108,000 tonnes of recyclables are placed in the rubbish and can't be recycled.

We need to make recycling more straightforward and less confusing. This consultation is about improving the way we recycle and recover waste.

My goal is to bring our recycling systems up to global standards.

Moving from planning to action

There are three connected initiatives:

In the first part, we're proposing ***a container return scheme***. This scheme will encourage people to return their drink containers for recycling in exchange for a small refund. Through a container return scheme, we expect to reduce litter and recover over 85 per cent of eligible containers.

The second part addresses our household ***kerbside recycling collections*** across New Zealand. A standardised system will improve the quality of what is recycled, reduce recycling costs, and be easier understand. Over time people will also have access to a food scraps bin at kerbside, which will help us reduce our carbon footprint.

The third part is about separating ***business food waste*** from general waste. Diverting our business food waste away from landfill is needed to both reduce greenhouse gas emissions and make better use of organic material to improve our soil, feed animals, or to produce biogas.

I encourage you to have your say and look forward to receiving your input.

Hon David Parker
Minister for the Environment

About this consultation document

The Government welcomes your comments on this consultation. The questions posed throughout this document can also be found on the Ministry for the Environment's website. They are a guide only; all comments are welcome. You do not have to answer all the questions.

To ensure your point of view is clearly understood, please explain your rationale and provide supporting evidence where appropriate.

This consultation document seeks feedback on three proposals related to transforming recycling:

- **Part 1:** Container Return Scheme
- **Part 2:** Improvements to household kerbside recycling
- **Part 3:** Separation of business food waste

These three proposals are part of a long-term shift toward a circular economy, where packaging is made of materials that maintain their value and are easier to recycle. Greater quantities and cleaner streams of material will be recovered for recycling.

Wording in this document:

- A **container return scheme** is a resource recovery scheme that encourages people to return beverage containers for recycling or refilling in exchange for a refundable deposit.
- **Improvements to household kerbside recycling** is a set of proposals to improve the quality and quantity of material collected for recycling at kerbside from households.
- **Separation of business food waste** is when businesses collect food waste in separate bins to their rubbish bins. Businesses still have choices as to how they then dispose of that food waste, for example, through commercial composting, composting on site, or feeding the food scraps to animals.

Timeframes

This consultation starts on 13 March 2022 and ends at 11:59pm on 8 May 2022.

When the consultation period has ended, officials will analyse submissions and provide advice to the Government.

How to provide feedback

There are two ways you can make a submission:

- via Citizen Space, our consultation hub, at https://consult.environment.govt.nz/waste/transforming-recycling
- write your own submission.

If you want to provide your own written submission you can provide this as an uploaded file in Citizen Space.

We request that you do not email or post submissions, as this makes analysis more difficult. However, if you need to, please send written submissions to *Transforming recycling consultation, Ministry for the Environment, PO Box 10362, Wellington 6143* and include:

- your name or organisation
- your postal address
- your telephone number
- your email address.

If you are emailing your feedback, send it to transformingrecycling@mfe.govt.nz as a:

- PDF, or
- Microsoft Word document (2003 or later version).

Submissions close at 11.59 pm, 8 May 2022.

More information

Please direct any queries to:

Email: tranformingrecycling@mfe.govt.nz

Postal: Transforming recycling consultation, Waste and Resource Efficiency Division, Ministry for the Environment, Wellington 6143

Publishing and releasing submissions

All or part of any written submission the Ministry for the Environment receives electronically or in printed form, including your name, may be published on our website, environment.govt.nz. Unless you clearly specify otherwise in your submission, the Ministry will consider that you have consented to website posting of both your submission and your name.

Contents of submissions may be released to the public under the Official Information Act 1982 following requests to the Ministry for the Environment (including via email). Please advise if you have any objection to the release of any information contained in a submission and, in particular, which part(s) you consider should be withheld, together with the reason(s) for withholding the information. We will consider all such objections when responding to requests for copies of, and information on, submissions to this document under the Official Information Act.

Introduction

We pride ourselves on being a 'clean and green' country in Aotearoa New Zealand. However, the amount of waste we produce is a major problem, and our recycling rates are relatively low compared to other countries with better systems in place.

In 2020, we sent 3.38 million tonnes of waste to class 1 municipal landfills. We estimate that nationally only 28 per cent of materials are recycled, and the other 72 per cent go to landfills. In contrast, Germany, Austria and Wales have the highest recycling rates in the world, with over 50 per cent of all waste recycled.

While our waste generation is a national challenge, our recycling and waste recovery also need to be addressed at a systemic and national level to move New Zealand toward a low-emissions, circular economy.

Aotearoa New Zealand's waste challenge

Low beverage container recovery

New Zealanders consumed over 2.57 billion beverages in 2020/21, sold in single-use containers made from plastic, aluminium, glass and liquid paperboard. By weight, it is estimated that just 45 per cent of these containers were recovered for recycling, which is low compared to many countries with container return schemes, especially in Europe. Our low recovery means that an estimated 1.7 billion beverage containers were stockpiled, littered or landfilled in New Zealand in the 2020/21 financial year.

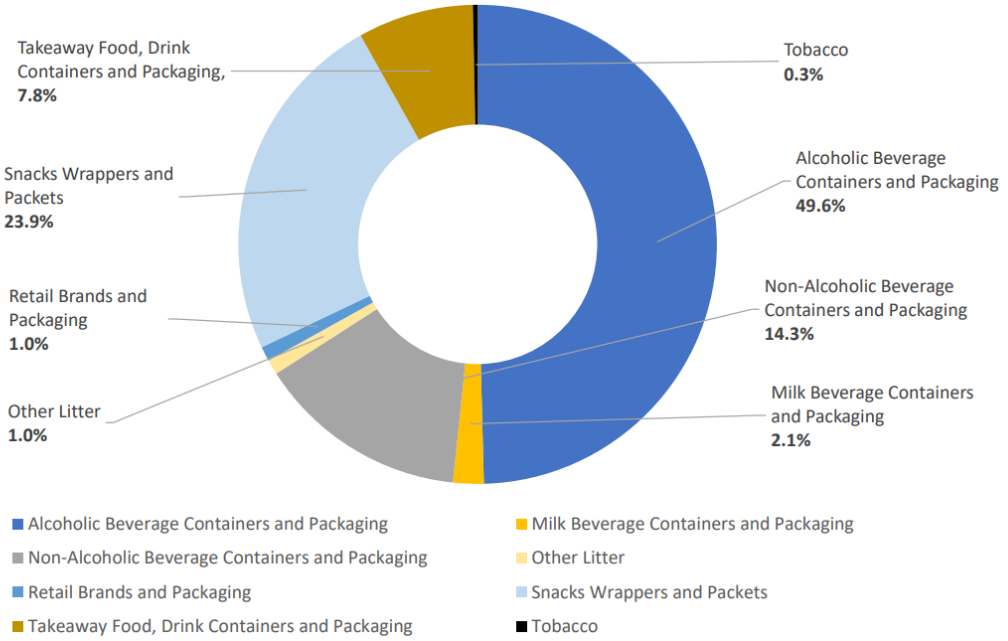
One problem is that our existing resource recovery systems do not incentivise nor enable individuals to recycle beverage containers when they are away from home. Public place recycling can recover some beverage containers consumed away from home or 'on-the-go', but these bins are costly to service, capture very few containers, and are often contaminated with non-recyclable rubbish.

Litter from beverage containers

Beverages consumed 'on-the-go' are a significant source of litter. In 2019, beverage containers constituted 66 per cent of recognisable branded litter (figure 1) and 24 per cent of all litter in New Zealand.[1]

[1] https://www.knzb.org.nz/resources/research/national-litter-audit/

Figure 1: Branded litter by industry category



Source: Keep New Zealand Beautiful 2019 National Litter Audit

Keep New Zealand Beautiful 2019 National Litter Audit attributed two-thirds (66 per cent) of litter to beverage containers. The audit found an overall average number of 118 items per 1,000 m². This is high compared to the Australian average of 39 litter items (all types) per 1,000 m².[2] Industrial and retail sites in New Zealand were the first and second most littered areas respectively. Highways had the third highest number of littered items.

Inconsistent household kerbside recycling collections

New Zealand's household kerbside recycling collections are highly variable in terms of who has access to collection, what materials are collected, and how the materials are collected. No one type of recyclable packaging is collected by every council in the country. Most councils collect glass, paper and cardboard, but some do not.

This lack of consistency causes confusion for the public, which then makes it difficult for recyclers to maintain streams of clean high-quality materials that are free from contamination[3] and can be easily recycled.

Approximately 16 per cent of all materials placed in household kerbside recycling bins are contaminated – nationally, that is around 70,000 tonnes each year.[4] Equally, 13 per cent of all materials placed in household kerbside rubbish bins (108,000 tonnes) could be recycled. In other words, collectively New Zealand homes are incorrectly disposing of 178,000 tonnes of material at kerbside each year.

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2 www.stateoftheenvironment.des.qld.gov.au/pollution/waste/number-of-litter-items-in-queensland

3 Contamination can occur in several ways. When a non-recyclable item (eg, nappies) is placed in a recycling bin; when the condition of the item prevents it being recycled (eg, a half-eaten tub of hummus) and when the condition of the item hinders other items being recycled (eg, shards of broken glass).

4 Yates S, 2019. *Rethinking rubbish and recycling*. Prepared for the WasteMINZ TAO Forum by Sunshine Yates Consulting. Auckland: WasteMINZ.

The Ministry estimates that only 35 per cent of waste material placed in household kerbside recycling is actually recycled and diverted from landfills. Other countries such as Wales and Germany are achieving diversion rates as high as 50–60 per cent.

Low diversion of organic waste from landfills

The low diversion of organic waste from landfills is also an important waste recovery issue. Only 10 councils offer food scraps or food and garden waste collections to households across their entire region.[5] In some cities, businesses have access to food waste collections, but other cities do not.

As a result, we estimate that more than 300,000 tonnes of food waste are sent to landfills every year, and food waste contributes 22 per cent of New Zealand's total emissions from class 1 landfills. To meet our national emissions targets, the Climate Change Commission has recommended we aim to reduce emissions from all landfills by at least 40 per cent by 2035.

Impacts of waste and low recovery

Litter impacts

A lack of incentives to recycle and the inconvenience of recycling away from home are key causes of the low rates of recycling and high litter rates. Beverage containers are consistently among the most commonly littered items in New Zealand. While litter surveys are usually terrestrial, it is also understood that about 80 per cent of the litter found in our waterways comes from land.[6]

Litter pollutes our environment and impacts habitats and wildlife (eg, through animals ingesting plastic). Litter also has economic costs for ratepayers and volunteers (such as the time and labour costs of litter clean-ups), and negatively affects social amenity and human health (eg, through toxins and broken glass). The prevalence of waste and litter has broader implications, in particular for lower socioeconomic areas where litter is often more prevalent.[7]

Emissions contributions

Waste disposal and treatment produces around 4 per cent of New Zealand's gross emissions. Organic materials, such as food scraps, wood and cardboard, break down in the absence of oxygen and emit methane when they are put into landfills. Food scraps make up 9 per cent of waste sent to municipal (class 1) landfills but around 22 per cent of emissions from these landfills. These emissions are called 'biogenic' because they are released by living organisms.

Under the Climate Change Response Act 2002, New Zealand is committed to reducing biogenic methane emissions by 10 per cent by 2030, and 24–47 per cent by 2050, relative to 2017

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5 The following councils have kerbside collections that accept food scraps for composting: Christchurch City Council; Hamilton City Council; New Plymouth District Council; Ruapehu District Council; Selwyn District Council; Tauranga City Council; Timaru District Council; Waimakariri District Council; Waimate District Council; and Western Bay District Council. Auckland Council offers a food scraps collection in Papakura only and Waikato District Council has a food scraps collection in Raglan.

6 Keep New Zealand Beautiful 2019 National Litter Audit, page 17.

7 Schuyler Q, Hardesty BD, Lawson TJ, Opie K, Wilcox C. 2018. Economic incentives reduce plastic inputs to the ocean. *Marine Policy.*

levels. The Climate Change Commission has recommended a more ambitious target for waste of at least 40 per cent biogenic methane emissions reductions by 2035 (or approximately 30 per cent by 2030).[8] The Government will make decisions on this advice in 2022 as part of the 2022–25 emissions budget period and the emissions reduction plan.

The reduction, reuse and recycling of our key organic recyclable waste streams – including food, paper and cardboard waste – are critical ways to reduce our biogenic methane emissions.

Inorganic recyclable materials, such as plastic, glass and aluminium, that end up in landfills also contribute to carbon emissions. Recycling and reuse can reduce container production emissions significantly as the extraction and energy resources to manufacture products from new materials is often more carbon intensive.

Lost material revenue

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 here in New Zealand.

Large amounts of valuable resources are currently lost to landfills because of insufficient and inconsistent collection and diversion systems. This represents lost revenue and lost business opportunities for current and new recyclers and manufacturers of recycled products in New Zealand.

A changing world

The global waste market is changing rapidly. Many materials (eg, cardboard and plastics) are now combined in composite products and adequate technology to separate the material types is not available.

A significant amount of the collected recyclable materials in New Zealand is currently exported. China used to be the main market for over 50 per cent of the world's recycling, including receiving waste and recyclables from New Zealand. However, since the implementation of China's 'National Sword 2017' policy, recyclable commodities, such as plastic, have had to find new markets and are now exported to Southeast Asian countries, including Vietnam, Indonesia, Thailand and Malaysia.[9] China's National Sword has impacted prices and quality standards for materials and also what can be recycled.

These international market changes, as well as the impact of the COVID-19 pandemic, have created growing awareness and acceptance internationally that countries must reduce the impacts of manufactured products on their environments through a circular (make–use–return) economy. A 2021 survey of consumers in 23 countries, including New Zealand,

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8 https://environment.govt.nz/assets/publications/Emissions-reduction-plan-discussion-document.pdf

9 China's National Sword policy, announced in February 2019, included bans on certain types of recyclable waste and a strict maximum contamination standard of 0.5 per cent. The policy led to the removal of the largest recycling market in the world for low-value mixed plastics (eg, resin types 3 (polyvinyl chloride), 4 (low-density polyethylene), 6 (polystyrene) and 7 (other)).

reported a 53 per cent increase in their households' plastic packaging and food waste since the COVID-19 pandemic began.[10]

In addition, on 1 January 2021, new requirements for the trade in plastic waste under the Basel Convention came into effect globally.[11] Importers and exporters now need prior consent from the importing country for shipments of certain types of plastic waste (particularly low-value plastic waste that is hard to recycle).

While these global changes have largely impacted international markets for plastic waste, many importing countries are tightening controls on the trade of other types of waste materials for recycling.

Improving our domestic waste management

Our waste recovery systems need to be improved and to do this we need to create economic incentives to encourage New Zealanders to recycle. Our linear 'take–make–dispose' system relies on the extraction and importation of virgin materials and promotes replacement over keeping products and materials in circular use (figure 2).

Figure 2: The linear economy

Most New Zealanders are confident that together we can significantly reduce waste. In 2018 we commissioned research on New Zealanders' attitudes to environmental issues. We found that New Zealanders believe that reducing waste is the second (equal) most important challenge facing our country in the next 20 years, behind reducing poverty. About half of New Zealanders were very or extremely worried about the impacts of waste.[12]

New Zealanders are also making efforts to reduce their waste. For example, the 2018 Environmental Attitudes Baseline research showed that the majority of New Zealanders are already recycling at home or taking a reusable shopping bag when they go shopping.[13] According to the 2018 Keep New Zealand Beautiful National Litter Behaviour Research, 99 per cent of New Zealanders believe it is very important for our country to maintain its clean, green image, and 93 per cent believe it is very important not to litter. However, the same research also shows that about 16 per cent of New Zealanders litter, only about half of

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10 Filho W, Voronova V, Kloga M, Paço A, Minhas A, Salvia L, Ferreira C, Sivapalan S. 2021. COVID-19 and waste production in households: A trend analysis. *Science of the Total Environment* 777(145997).

11 https://environment.govt.nz/what-government-is-doing/international-action/basel-convention/

12 https://environment.govt.nz/facts-and-science/science-and-data/understanding-new-zealanders-attitudes-to-the-environment/

13 https://environment.govt.nz/assets/facts-and-science/science-and-data/new-zealanders-environmental-attitudes.pdf

New Zealanders recycle items they consume on the go, and less than half recycle at work, university or college.[14]

We need to improve New Zealand's domestic waste management systems. This would ensure that:

- it is easier and more convenient for people and businesses to recycle materials (eg, paper and glass) and to separate food waste for recovery
- we can recover as much of these materials as possible for recycling/processing and support the transition to circular manufacturing systems. This would support industries to manufacture products out of recycled materials onshore
- recovered materials that are exported for recycling are high quality, high value, and meet international standards and regulations.

Moving towards a low-emissions circular economy

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

Global principles of a circular economy

The three global principles of a circular economy are:

- **Design out waste and pollution** – Waste is viewed as a design flaw. Loss of materials and energy through the production process is minimised.
- **Keep products and materials in use** – Products are designed to be reused, repaired and recycled. Waste materials for one process become an input for another. Requires us to think about systems.
- **Regenerate natural systems** – Shifts our perspective from minimising environmental harm to regenerating natural systems. Valuable nutrients are returned to the soil and ecosystems are enhanced.

Ensuring more circular resource flows within the economy is critical to a circular economy. The concept of a circular economy encompasses both the biological and technical cycles (figure 3). In the biological cycle, organic materials (eg, food, garden waste and wood) are returned to the biosphere and soils, through such processes as anaerobic digestion and composting. The technical cycle recycles inorganic materials (eg, glass, plastic and aluminium) through a range of pathways including reuse, repair, remanufacture or recycling.

It is critical that the circular economy model is also based in renewable energy and resources. Where non-renewable resources are used, as in electronics, these should be recycled through highly efficient systems. The proposals in this consultation are aligned with the emissions reduction plan including the direction of initial work on its proposed circular and bioeconomy strategy and a national energy strategy.

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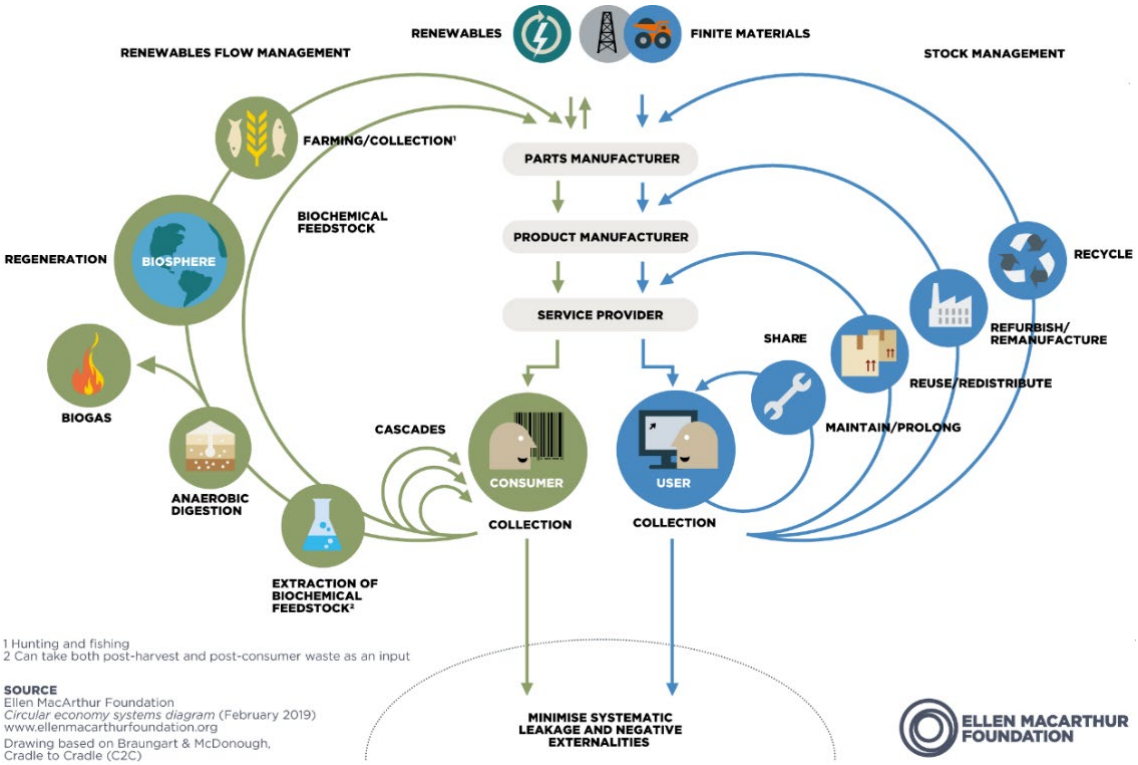
[14] Keep New Zealand Beautiful National Litter Behaviour Research, 2018.

Figure 3: The circular economy system



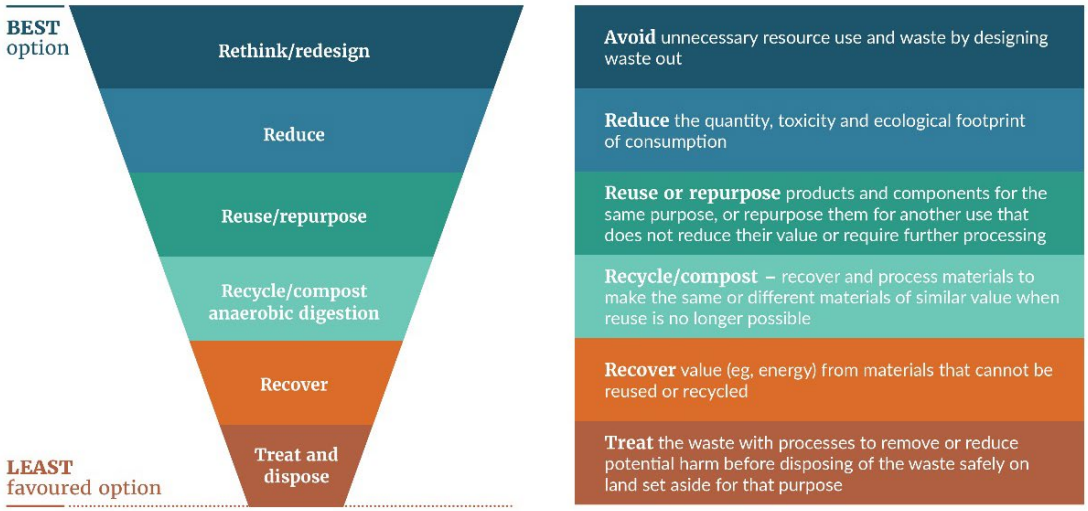
Source: Ellen MacArthur Foundation

The waste hierarchy

Aligned with the circular economy is the waste hierarchy, a globally recognised framework for minimising waste. The waste hierarchy helps us understand which pathways are more or less preferable for managing our resources and reducing environmental impacts (figure 4). There are many versions of the hierarchy, but the basic message is simple: we should maximise economic activity at the top of the hierarchy.

At the top of the hierarchy are desirable activities that avoid creating waste in the first place (most circular). At the bottom are activities associated with the disposal of waste (linear).

Figure 4: The waste hierarchy



The Ministry for the Environment has recently consulted on proposals for a new Waste Strategy and improved waste legislation. The proposed vision for the strategy is a circular economy for New Zealand in 2050.[15]

The new proposed Waste Strategy notes it is important we move up the waste hierarchy and that reduction is the preferred activity. However, we cannot ignore the fact that New Zealand has many recyclable resources still going to landfill – our journey to circularity involves a period of 'catching up' and we need to strengthen our capacity in the middle of the waste hierarchy. As we move towards reduction, we need systems and infrastructure that will enable a more circular economy, where resources can be recovered, recycled and reused.

We are building momentum

Achieving a circular economy within 30 years in New Zealand will require transformational change and require us to think differently about waste. The Ministry's current work programme for waste is focused on accelerating New Zealand's transition to a circular economy.

Our projects include:

- proposals for a long-term strategy for waste[16]
- proposals for revised legislation, combining and improving the Litter Act 1979 and the Waste Minimisation Act 2008 (WMA)
- proposals for reducing emissions across New Zealand, including waste, to be finalised in 2022 (the emissions reduction plan)[17]
- phasing out certain hard-to-recycle and single-use plastic products and working with sector experts to develop a plan for single-use cups and wet wipes.
- working with industry to develop product stewardship schemes for six priority products: tyres, plastic packaging, electrical and electronic products, agrichemicals and their containers, refrigerants, and farm plastics.

Full details of the Government's current work programme on waste are set out in the Ministry for the Environment's *Waste reduction work programme*.

The proposals in this consultation document

In late 2019, the Office of the Prime Minister's Chief Science Advisor released a report, *Rethinking plastics in Aotearoa New Zealand*, to look at how to reduce the environmental impact of plastic. The report included a recommendation to implement a container return scheme and also recommended increasing recycling rates and quality by improving source separation, standardising national recycling practices, and ensuring equitable access to recycling.[18]

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15 https://consult.environment.govt.nz/waste/taking-responsibility-for-our-waste/

16 https://environment.govt.nz/publications/taking-responsibility-for-our-waste-consultation-document/

17 https://environment.govt.nz/publications/emissions-reduction-plan-discussion-document/

18 Office of the Prime Minister's Chief Science Advisor. 2019. *Rethinking plastics in Aotearoa New Zealand.* Wellington: Office of the Prime Minister's Chief Science Advisor.

Earlier in the same year, the Government set up the National Resource Recovery Taskforce to respond to China's import restrictions on plastics and other recyclables to ensure the ongoing viability of the recycling sector. The taskforce also recommended reviewing household and business recycling practices to reduce contamination[19] These proposals are part of the Government's response to the recommendations in the *Rethinking plastics in Aotearoa New Zealand* report and recommendations of the National Resource Recovery Taskforce.

Investing in domestic recycling will provide opportunities to create jobs and stimulate the economy. Resource recovery and circular manufacturing are areas with significant growth potential for New Zealand. Recycled materials can be integrated into local circular economy processes, creating more stable markets for recycling by meeting local demand from local supply.

Part 1: Container Return Scheme

The Government is consulting on a container return scheme for New Zealand (NZ CRS) in order to increase the recovery of beverage containers and to reduce litter.

A container return scheme (CRS) is a resource recovery scheme that encourages people to return beverage containers for recycling or refilling in exchange for a refundable deposit. When someone buys a drink, they pay a refundable deposit on the normal price of the drink. When the empty beverage container is returned to a CRS collection point, the person gets that deposit refunded.

Based on the proposed design outlined in this consultation document, we expect that implementation of the NZ CRS will increase recycling rates to 85–90 per cent, which will significantly reduce litter. The best performing schemes in the world – eg, in Germany, Denmark, Finland, Croatia, Netherlands, Iceland, Norway, Sweden, Lithuania, Michigan, and Oregon – achieve return rates of over 85 per cent. A NZ CRS will also provide a range of benefits such as circular economy job creation, industry growth and innovation, and improved public awareness and engagement in resource efficiency.

A CRS can have a significant potential for behaviour change, given the refundable deposit is a cash incentive to return beverage containers. Research in Australia and the United States found that states with a CRS had approximately 40 per cent less beverage container litter on their coasts than states without CRS.[20] The reduction in beverage container litter in states that have a CRS was greater in poorer communities, where litter and debris loads are often the highest. This signifies that the application of a refundable deposit may also a higher marginal value to less affluent communities.

Introducing a NZ CRS could drive development of new onshore infrastructure to recover and recycle significantly more beverage containers. Many of these containers would otherwise be landfilled or littered. The availability of a consistent supply of beverage container material via a NZ CRS may also help beverage and other packaging producers increase their use of recycled materials in the production of new containers, thereby creating a closed-loop, circular system.

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19 https://environment.govt.nz/assets/Publications/national-resource-recovery-briefing-note-v2.pdf

20 Schuyler Q, Hardesty BD, Lawson TJ, Opie K, Wilcox C. 2018. Economic incentives reduce plastic inputs to the ocean. *Marine Policy.*

A CRS would help New Zealand's transition to a circular economy by increasing beverage container recovery for recycling and by reducing the demand and need for virgin materials.

Part 2: Improvements to household kerbside recycling

The Government is proposing to measure and improve the performance of household kerbside collections. Six proposals are being considered.

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 scraps collections would accelerate our progress towards a circular economy.

Actions that improve the performance of kerbside recycling could include:

- requiring councils to divert a certain amount of kerbside material from landfills
- setting a standard list of materials that every household kerbside recycling service will collect
- requiring provision of household kerbside organic waste collections (food scraps and possibly garden waste).

Rolling out organic waste collections would likely divert 125,000–180,000 additional tonnes of food scraps from landfills per annum, contributing to emissions (methane) reductions and waste-diversion targets.

The Government may consider making regulations to support improved household kerbside recycling, but it is also open to alternatives, such as voluntary agreements or issuing best-practice guidance. However, New Zealand and other countries have tried voluntary approaches before, with little success.

Part 3: Separation of business food waste

The Government is proposing to make the separation of food waste from general waste mandatory for all businesses. The food waste diverted from landfills can be used instead to feed animals, improve soil quality, and for energy. An estimated 25 per cent or more of all food waste sent to landfills comes from businesses – approximately 75,000 tonnes today, rising to 100,000 tonnes by 2030. Separating food scraps from general waste enables businesses to see how much food is wasted, helping them to identify opportunities to reduce food waste and save money. Businesses will have choices about how they manage food scraps once separated. Some may use their recycling company to remove food scraps, while others may choose to compost on-site or use the waste to feed animals.

The requirement to separate food scraps could be phased. For example, businesses in cities and towns with existing food waste collections might be required to separate sooner. Alternatively, the focus could be on businesses that produce the most food waste first, and later the scheme could be expanded to businesses with less food waste, so that by 2030 all businesses are using food scraps collections. Diverting business food waste from landfills

will reduce emissions and contribute to meeting the proposed waste reduction targets for businesses in the refreshed waste strategy.

How do the proposals work together?

Introducing a NZ CRS, improving our national kerbside recycling system, and business food waste collections are three foundational and coordinated initiatives that would lift the performance of New Zealand's resource recovery and waste system and help the country move toward a low-emissions, circular economy. We would be following many other countries that have already implemented similar initiatives.

These three initiatives focus on different aspects of the circular economy:

- The proposals for a NZ CRS primarily focus on the technical cycle of the circular economy by increasing the recovery and quality of beverage materials made from plastic, metal and glass. The materials will be separated, recycled and reprocessed in their technical cycles (right-hand side of figure 2).[21]
- The proposals for improving household kerbside recycling focus on increasing both the quantity and quality of materials in *both* the technical and biological cycles of the circular economy. This includes, for example, food scraps and cardboard as well as glass, plastic, steel and aluminium.
- The proposal for separating business food waste focuses on the biological cycle of the circular economy, reducing both waste to landfill and emissions, and improving the quality of New Zealand soils through compost and other soil amendment products.

Implementation of these integrated proposals would result in improved collection systems across New Zealand, supporting investment in equipment and infrastructure for efficient and widespread collection, and sorting and processing of recyclable materials. It would also encourage the development of new markets for recycled materials and innovations in the way they are used. Overall, this will ensure higher quality and quantity of material for recycling.

A NZ CRS would complement kerbside recycling by addressing away-from-home consumption of beverages that kerbside collections cannot capture. A NZ CRS would also reduce the volume of beverage containers managed kerbside,[22] which would reduce costs to ratepayers and councils, reduce contamination, and reduce landfill and litter costs.

Introducing a NZ CRS, improving household kerbside recycling and diverting business food waste will all reduce emissions from waste, supporting the proposed emissions reduction plan.[23] Diverting food scraps from landfills through household and business collections would also reduce our landfill emissions. Food scraps collections are practical and are likely to provide long-term benefits as nutrient cycles are restored. In addition, increasing the quality and quantity of materials collected for recycling (through a NZ CRS and improved household kerbside recycling) would reduce greenhouse gas emissions, as using recycled materials to create new products is typically less energy intensive than making products from virgin materials.

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21 A part of circular 'cradle-to-cradle' design is where biological waste can become nutrients in the biological nutrient cycle, while technical materials (eg, metal, glass and plastic) can be continually reprocessed in the technical cycle.

22 This is due to the economic incentive to return beverage containers to a CRS return point for the deposit refund (eg, 20 cents). For more information, see Proposed refundable deposit level.

23 https://environment.govt.nz/publications/emissions-reduction-plan-discussion-document/

These three proposals will help to strengthen our capacity in the middle of the waste hierarchy, by increasing the recovery and recycling of materials. This aligns with the Ministry's strategic direction to move New Zealand closer to a low-waste and low-carbon future.

Part 1:

Kaupapa whakahoki ipu
Container Return Scheme

Why do we need a container return scheme?

A container return scheme (CRS) is a resource recovery scheme that encourages people to return beverage containers for recycling or refilling in exchange for a refundable deposit (figure 5). When someone buys a drink, they pay a scheme fee, which includes the refundable deposit (eg, 20 cents) on top of the normal price of the drink.[24] When the empty drink container is returned to a CRS collection point to be recycled, the person gets that deposit refunded.

The financial incentive for the individual (the refundable deposit) is what distinguishes a CRS from other strategies for increasing beverage container recovery. As a form of product stewardship, a CRS seeks to shift the costs of recycling away from councils and ratepayers to those responsible for the supply chain and the product's life cycle (ie, manufacturers, beverage producers, retailers and consumers). A CRS ensures those who manufacture and import beverage containers take responsibility for the life cycle of the products they sell in New Zealand.

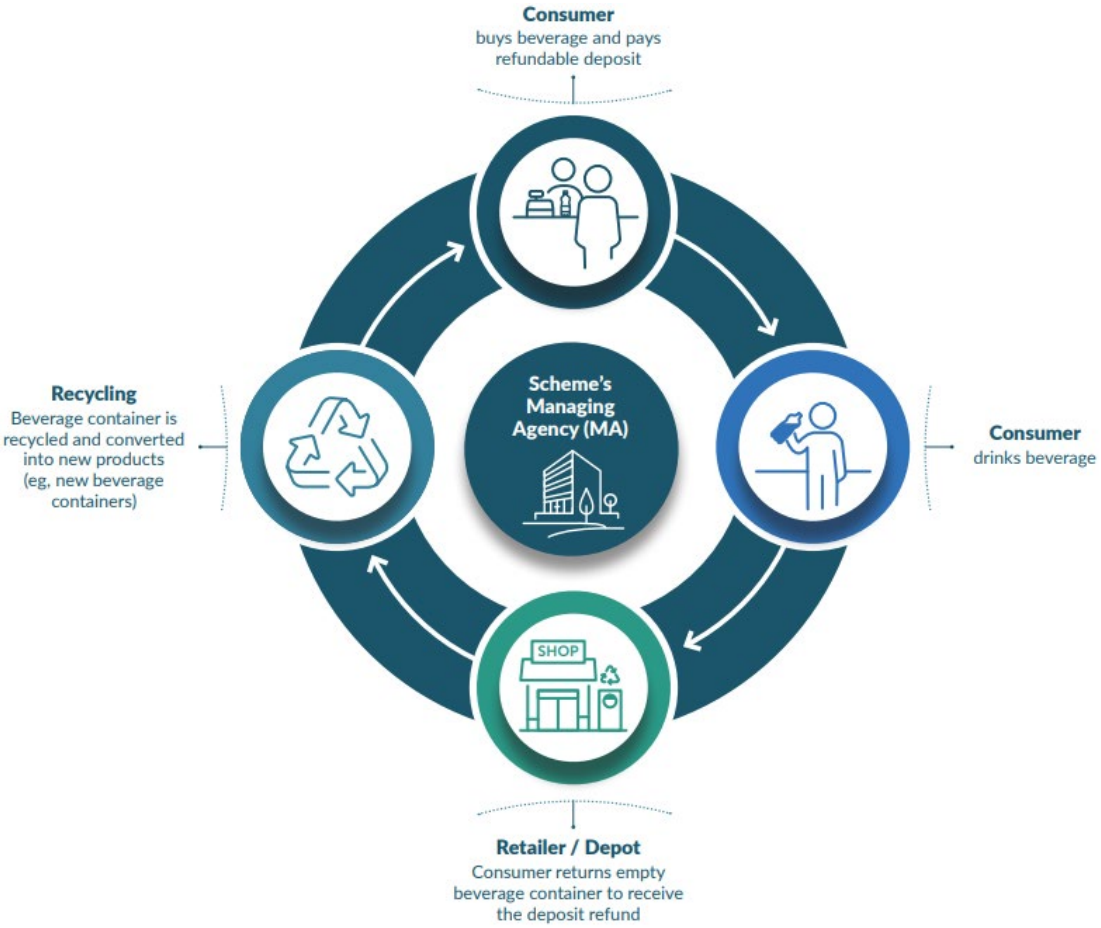
Overseas, CRS have been proven to be a successful solution to decrease beverage container litter and increase recovery. Approximately 50 schemes exist globally, with more expected by 2023. For example, every Australian state has, or is in the process of, implementing a CRS. However, each scheme is designed to suit the specific needs of the people, place or country in which it operates.

Container return schemes support:

- increased beverage container recovery rates, mainly away from home
- reduced litter
- reduced emissions by decreasing the need for virgin packaging
- public behaviour change and a more positive attitude to recycling and litter
- a shift in the costs of resource recovery and waste minimisation away from councils and ratepayers to the consumers and producers of beverage containers.

[24] In reality, beverage producers and retailers may choose to pass on some or all of the scheme costs. We have assumed that on average 100 per cent pass on the costs, as such information is commercially sensitive within the relevant industries. This means that for a 20-cent deposit, a consumer may pay an additional 23–25 cents (+GST) per container, of which 20 cents is refundable.

Figure 5: Basic operation of a container return scheme – consumer perspective



To date, there has been strong public support for a NZ CRS. In 2018/19 the impetus for a CRS grew with 96 per cent of local government mayors in favour of a scheme. In 2020, a *Consumer NZ* survey found that 78 per cent of respondents were in favour of a scheme.[25]

The Labour Party's 2020 Election Manifesto noted a commitment to investigate a NZ CRS. Implementing a NZ CRS is also a recommendation of the Office of the Prime Minister's Chief Science Advisor's 2019 report *Rethinking Plastics in Aotearoa New Zealand*.

Our aim is to reduce beverage container litter and increase recycling

The main aim of a container return scheme is to collect as many beverage containers as possible, so that more containers can be recycled or reused and fewer containers are littered, stockpiled or landfilled. The best performing schemes in the world – including Germany, Denmark, Finland, Croatia, Netherlands, Iceland, Norway, Sweden, Lithuania, Michigan, and Oregon – achieve return rates of over 85 per cent.

New Zealand's recovery rate of single-use beverage containers is relatively low, particularly when compared to countries that have container return schemes. Of the estimated 2.57 billion beverages sold in 2020/21 in New Zealand, it is estimated that *less than half* (45 per cent by weight) were recovered for recycling.

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[25] Majority support for container return scheme. 2020. *Consumer.*

This means that an estimated 1.7 billion beverage containers were either stockpiled, littered or sent to landfills in New Zealand in 2020/21. Depending on how it is designed, a NZ CRS could increase beverage container recovery to 85 per cent or higher. At an 85 per cent recovery rate, the scheme would receive more than 2 billion beverage containers annually for recycling.

Beverage containers are a significant and visible source of litter on our coastlines, public spaces, and landfills. A Keep New Zealand Beautiful litter survey found that beverage containers constituted 66 per cent of recognisable branded litter and 24 per cent of all litter collected.[26] Alcoholic beverage containers and packaging were the predominant industry source of branded litter (49.6 per cent), followed by non-alcoholic beverage containers and packaging (14.3 per cent).

This beverage litter has a significant impact on our environment. It also represents a lost opportunity to recover beverage container materials, such as plastic, metal and glass, for recycling and to recover the financial value from these containers.

Case study – Australia beverage litter

Australian states have low beverage container litter rates compared to New Zealand, which is likely due in part to the widespread adoption of CRS. All Australian states and territories have introduced (or are planning to introduce) a CRS.

New South Wales introduced a CRS in 2017. Since then, more than 2.7 billion beverage containers have been returned. National Litter Index data from 2018/19 show that since the scheme's introduction, eligible beverage container litter has reduced by 40 per cent. Eligible beverage containers made up only 7 per cent of littered items counted in 2018/19.[27]

The Australian Capital Territory CRS was introduced in June 2018, and beverage container litter fell 61 per cent in a 2018/19 litter audit.

South Australia has the longest standing CRS in Australia (introduced in 1977), and beverage containers now make up only 2.8 per cent of litter.

Policy objectives for a NZ CRS

Container return schemes are a key initiative to help the shift from a linear economy to a circular economy.

The main objectives of the NZ CRS are:

- to increase the circularity of beverage containers
- to enable a producer responsibility model that fosters a shared responsibility for beverage containers
- to produce wider community benefits for New Zealand.

26 Keep New Zealand Beautiful (2019). National Litter Audit.

27 New South Wales Litter Prevention Strategy 2019–2022.

Table 1: New Zealand's CRS objectives

Objective one: Circular economy	
Increase the circularity of beverage containers by:	• reducing beverage container litter • enabling improved recycling outcomes for beverage containers (eg, bottle-to-bottle recycling) • reducing emissions from beverage containers (by using recycled materials to create new products) • ensuring a NZ CRS is aligned with our kerbside system, the waste hierarchy, and the proposed new strategy for waste • providing the means to collect greater quantities and cleaner streams of beverage container materials.
Objective two: Producer responsibility	
Enable a producer responsibility model that fosters a shared responsibility for beverage containers by:	• shifting the costs of resource recovery and waste minimisation from ratepayers and councils to the producers and consumers of beverages • ensuring those who manufacture and import beverage containers take responsibility for the lifecycle of the products they sell in New Zealand • facilitating cooperation and participation between scheme participants across the beverage supply chain, including brand owners, manufacturers, retailers, recyclers, government and consumers.
Objective three: Community benefits	
Produce community benefits for New Zealand by:	• creating new opportunities for employment, community participation, fundraising for charities and social enterprises, and with consideration for hapū/iwi participation • making it easy and convenient to return beverage containers across New Zealand without adding additional trips to people's lives • changing the public's behaviour and attitudes towards recycling and litter.

Alignment with kerbside collection systems

Overseas, CRS typically operate alongside kerbside collection systems. Improvements to household kerbside collections in New Zealand (refer to Part 2 of this consultation document) will increase the resource recovery (and the quality) of non-beverage containers and packaging that are typically consumed and disposed of at home, as well as increasing the diversion of food scraps and garden waste.

Single-use beverage containers are designed to enable people to consume beverages both at home and on-the-go, or 'away from home'. Public place recycling can recover some beverage containers consumed away from home, but these bins are costly to service, capture very few containers, and are often contaminated with non-recyclable rubbish.[28]

The current cost of recycling largely sits with councils and ratepayers, through the provision of household kerbside recycling services, public place recycling and litter enforcement. A CRS would shift the costs away from councils and ratepayers, to those responsible for

[28] Wellington City Council is removing its public recycling stations, following completion of its Public Place Recycling (PPR) trial. Reasons for removing the stations include the small volumes of recycling diverted from landfills and the cost of servicing the stations (estimated at 10 times the cost per tonne for collecting kerbside recycling). https://wellington.govt.nz/news-and-events/news-and-information/our-wellington/2021/06/public-place-recycling

the production and consumption of beverages (eg, beverage producers/importers, retailers and consumers).

Overall, a NZ CRS would complement kerbside recycling by providing local government (and/or recyclers) an estimated $50 million in benefits annually by:

- reducing volumes managed at kerbside (reducing costs)
- significantly increasing the value of beverage containers that are still recycled at kerbside (unclaimed deposits increases the per container revenue)
- reducing landfill costs (associated with both recycling and waste collections)
- reducing contamination rates.

A CRS also:

- addresses the portion of people who are unable or insufficiently incentivised to recycle at home
- generates value from additional high-value materials (eg, aluminium and plastic), estimated at more than $20 million annually (with or without glass in a scheme).

Some beverage container types are among the most valuable materials collected in recycling bins, whether from businesses or households. Besides, beverage containers that are still collected in a household kerbside bin (rather than returned to a container return facility) will have a much higher value because of the unredeemed deposits. This deposit value would more than offset the loss of value from household kerbside when most beverage containers are recycled through the CRS (assuming approximately 10 per cent of containers remain in kerbside collection).

Councils and recyclers would need to establish contractual arrangements to manage the new unclaimed deposit revenue from household kerbside recycling bins. We expect negotiations would begin with a 50:50 split between the parties. These negotiations would need to be concluded prior to commencement of the CRS.

Businesses would have the option of redeeming container deposits directly or entering into a service contract with a collection provider that accounts for the deposit value of the containers. In the latter case, the business may expect to be remunerated for the deposit value that it recycles, less the commercial collection cost.

Co-design project for a NZ CRS

In 2020, a working group made up of industry, local government and sector stakeholders conducted an investigation and co-design project for a NZ CRS.[29] Auckland Council and Marlborough District Council jointly led the project, supported by a Technical Advisory Group (TAG) that was independently appointed by the Ministry for the Environment.

The co-design project produced substantial research, modelling and cost-benefit analyses. It identified proposed design options for a NZ CRS, which were tested with the working group and the TAG. Stakeholder views were split on key issues, such as whether glass should be

[29] The CRS Scheme Design Working Group (SDWG) included recyclers, retailers, beverage producers, container manufacturers, charitable organisations, local authorities, Local Government New Zealand, the Ministry for the Environment, Māori perspectives, consumer advocacy, product-stewardship groups, and youth representatives.

included in a scheme. More information about this project and its outputs is available on our website.[30]

Further analysis and modelling

Building on the 2020 co-design project, the Ministry has undertaken further research, analysis and engagement to develop advice and options for Ministers on a NZ CRS. This has included:

- further engagement with key stakeholders from the co-design process[31]
- additional financial modelling
- updated cost-benefit analysis
- updated beverage container data.

Key elements of the proposal

Cabinet has given direction on key design elements for a NZ CRS, based on the NZ CRS co-design project and further policy advice from the Ministry. These recommendations are the basis of the design proposals presented here.

In order to design the best possible CRS for New Zealand, we are seeking public feedback on the following proposed key scheme design elements:

- the refundable deposit amount (and broader scheme finances)
- types of eligible beverages and beverage containers
- recovery network design
- scheme financial model
- model for managing and governing the scheme.

Next steps after consultation

This consultation will close on 8 May 2022. We will analyse and summarise the feedback received and present this to Ministers and Cabinet. A summary of submissions will be published on the Ministry's website. The Government will still need to make a final decision on whether to implement a NZ CRS.

Should the Government decide to proceed with a NZ CRS, there will likely be further consultation on a NZ CRS at the regulation/legislation development phases. Pending the legislative process, we anticipate a NZ CRS could be operational in New Zealand by 2025.

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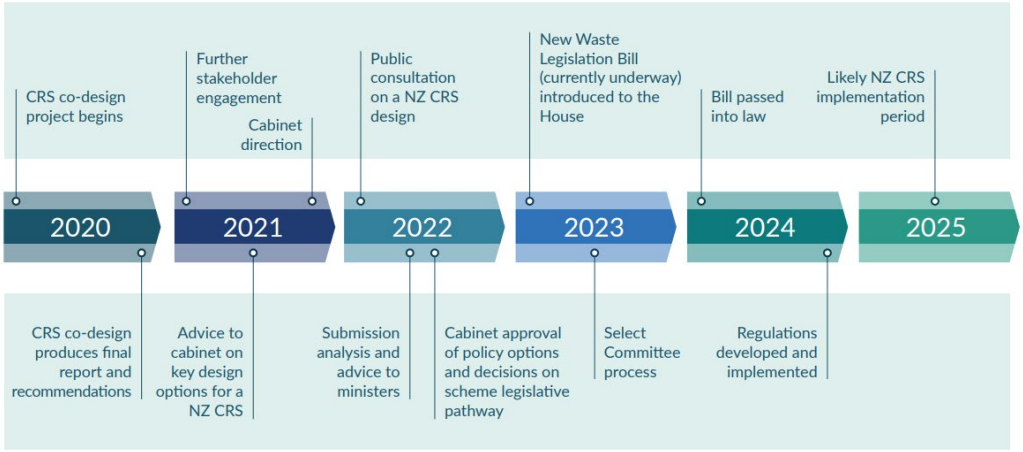
30 https://environment.govt.nz/what-government-is-doing/areas-of-work/waste/container-return-scheme-reducing-waste-landfill/

31 Stakeholder meetings included New Zealand Beverage Council, the Glass Packaging Forum, Technical Advisory Group members including the Chair, Zero Waste Network Aotearoa, NZ Product Stewardship Council, and TOMRA (a Norwegian multi-national corporation manufacturing collection and sorting products, such as reverse vending machines).

Figure 6: Timeline for implementing a container return scheme if a scheme is to proceed (subject to change)



Proposals for a NZ CRS

What do we mean by 'beverage' and 'beverage container'?

For the purposes of this consultation document, a 'beverage' means a liquid substance that is intended for human consumption by drinking. This proposed definition includes concentrates and cordials (given that it does not specify that a beverage needs to be 'ready to drink') and beverages such as drinkable yoghurt, smoothies, etc.

An eligible 'beverage container' refers to a 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. For clarity, this proposed definition of an eligible beverage container would mean that open beverage containers such as cups and coffee cups, and non-beverage containers (eg, ice cream tubs) are out of scope and would not be included in the scheme. This means that these containers could still be sold in New Zealand, but they are not eligible to include a refundable deposit and scheme fees in the purchase price and cannot be returned through the NZ CRS.[32]

These proposed definitions for 'beverage' and 'beverage containers' will be considered again at the regulation/legislation making stage should a NZ CRS proceed. We are interested in your feedback on them.

Questions

1 Do you agree with the proposed definition of a beverage?

2 Do you agree with the proposed definition of an eligible beverage container?

Proposed refundable deposit amount

A NZ CRS would require that eligible beverage containers carry a refundable deposit to encourage consumers to return empty containers to a designated collection point for the refund. The refundable deposit amount is the financial value that is 'added' to the normal price of a beverage, and is only applied to beverage containers that are eligible within the scheme.

When an empty beverage container is returned to a designated collection point for recycling, the person gets the deposit refunded. This is sometimes known as 'redeeming' or 'container redemption'. This cash refund directly incentivises consumers to return their containers for recycling.

Deposit refunds can be provided in many different ways, including cash, supermarket vouchers (for cash or credit), optional donations to charity, or electronic funds transfer (through a scheme account or mobile phone app). Consumer NZ research in 2020 found that 40 per cent

[32] The Ministry has work programmes underway to address issues associated with non-beverage packaging and cups. More information is provided in Appendix 1.

of people would prefer to receive their refund in cash, while 21 per cent would prefer a direct payment to their bank account (figure 7).

Figure 7: Beverage container return scheme survey results

Source: Consumer NZ, June 2020

In addition to the refundable deposit, the core costs of a CRS are covered by a non-refundable CRS scheme fee. The scheme fee covers the costs of managing the scheme, including recovering, transporting and processing the returned beverage containers. Where applicable, the costs of exporting recovered materials to recycling markets may also be covered by the scheme fee.

Overseas schemes use a range of deposit amounts to incentivise returns

Modelling based on the performance of international schemes shows the deposit refund amount is the most important driver to incentivise consumers and businesses to return their containers for recycling. Overseas schemes use a range of deposit amounts, from NZD 11 cents in some Australian schemes to NZD 30 cents or more in many European schemes.[33]

Simplistically, a smaller deposit of 10 cents or less creates a lower incentive for consumers to return their beverage containers for the refund and therefore lower recovery rates. In contrast, high-performing schemes with return rates over 85 per cent generally have deposits ranging from 12 to 67 cents, with an average of 28 cents across higher performing schemes.[34] For example, Germany, Netherlands, Finland, Norway, and Denmark have refundable deposits of 30 cents or more and achieve beverage recycling rates of over 90 per cent.

Despite the importance of the deposit amount, it is not the only variable that influences return rates. For example, Lithuania is the only scheme to have achieved over 90 per cent recovery in just three years and with a deposit of 17 cents. The scheme has been successful because all beverage retailers are required to take back containers, which means it is easier for consumers to return their containers to any beverage retailer (see Proposed recovery network design).

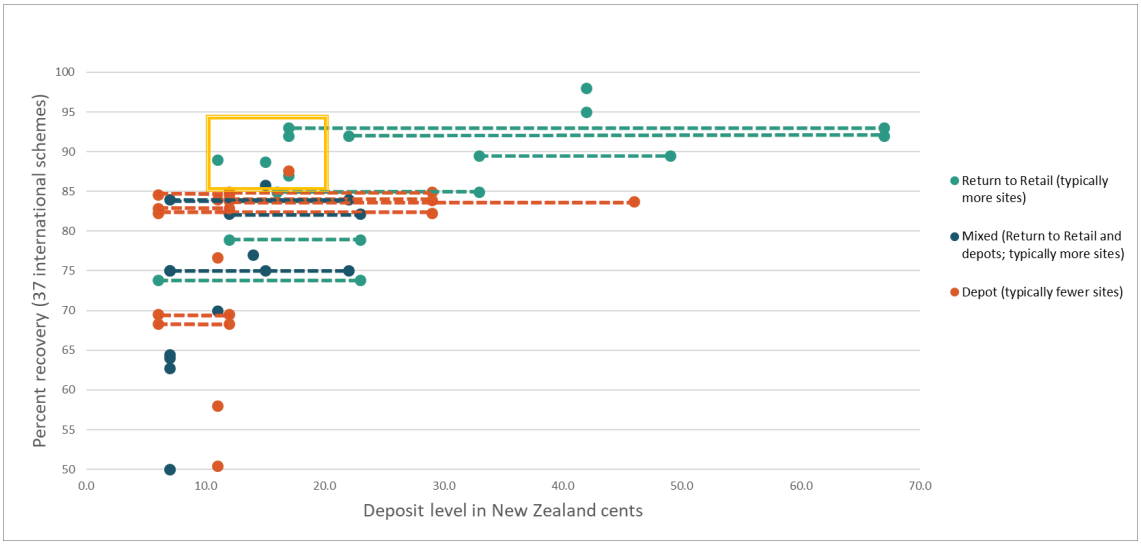
So, a low- to mid-level deposit combined with high convenience can still achieve high recovery rates. This is the performance target zone for the NZ CRS scheme design: a strong enough incentive to recycle, with a highly convenient return system for consumers (which also makes

[33] All currency is converted to NZD unless otherwise specified.

[34] For the purpose of this discussion document, 'high-performing' schemes are those that have container return rates of 85 per cent, or higher.

the scheme more affordable). This performance target zone is highlighted by the yellow box in figure 8.[35]

Figure 8: International scheme performance: network types with deposit levels versus reported return rates



Most of the schemes in the yellow performance target zone in figure 8 require retailers that sell takeaway beverages to take containers back. Iceland (the red dot in the yellow box) has the only scheme in this target zone that uses the depot model (where retailers are not mandated to take back containers). Depot-based schemes are most likely to perform highly in places where the population is relatively low and concentrated in one large city. Iceland, for example, has a total population of 364,000 and 60 per cent of residents live in the capital region. Similarly, the Northern Territory – with a population of just 247,000, most of whom live in Darwin – has Australia's best performing depot-based scheme.

A range of deposit amounts from 10 to 30 cents have been considered for a NZ CRS. A deposit of 30 cents or more was ruled out, because while likely to achieve high recovery and low litter rates, it would also cost significantly more for consumers.

At the other extreme, a 10-cent deposit would likely result in lower recovery, estimated at 78 per cent of beverage containers (by year 5 of the scheme). We estimate that at this rate, approximately 526 million beverage containers would still be littered, landfilled or stockpiled every year.

We are proposing a 20-cent deposit

We are proposing that a 20-cent refundable deposit is applied to all 2.39 billion eligible beverage containers within the NZ CRS scheme.[36] A 20-cent deposit amount would provide a strong incentive for consumers to return over 2 billion containers for recycling (an increase of over 1.17 billion), while significantly reducing litter.

The benefits of a 20-cent deposit, over a lower deposit amount, include:

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35 Performance target zone schemes include Lithuania (NZD 17 cents), Croatia (NZD 11 cents), Iceland (NZD 17 cents), Estonia (NZD 17 cents), Michigan, USA (NZD 15 cents), Oregon, USA (NZD 15 cents).

36 Note that 2.39 billion eligible containers accounts for the proposal to exclude approximately 183 million fresh milk containers from a NZ CRS, see Fresh milk in all packaging types.

- creating a relatively strong incentive to return containers for a refund
- achieving a higher return rate of at least 85 per cent, when combined with other scheme design characteristics
- reducing beverage container litter, because in addition to recycling incentives, people are more likely to pick up littered containers for their deposit refunds
- being more closely aligned with deposit levels of higher-performing schemes overseas while still providing an easy-to-administer and understandable (uniform deposit level) scheme
- enabling charities, sports clubs, schools, etc to run litter clean-ups and charity drives for containers that deliver greater benefits to these organisations.

While important, the deposit amount is one factor in the success of a CRS. If the NZ CRS also has a return-to-retail take-back provision as proposed, we expect a recovery target of 85 per cent (or higher) is possible with a 20-cent deposit amount (see Proposed recovery network design).

Questions

3 Do you support the proposed refund amount of 20 cents?

4 How would you like to receive your refunds for containers? Please answer all that are relevant and select your preference.

- cash
- electronic funds transfer (eg, through a scheme account or mobile phone app)
- vouchers (for cash or equivalent value product purchase)
- donations to local community organisations/charities
- access to all options
- other (please specify)

Scheme fees

The core costs of a CRS (aside from the refundable deposit) are covered by a non-refundable CRS 'scheme fee'. Scheme fees flow through the system to fund the CRS and cover the cost of managing the scheme, and are a core financial element of schemes globally. Scheme fees include:

- the handling fee
- transport costs
- scheme material consolidation facility costs
- scheme administration.

The scheme fees are variable costs and to some degree depend on the nature and efficiency of a scheme. They are also proportional to the number of containers returned, because the substantive cost within the scheme fee is the 'handling fee' paid to return facility operators for each container that comes back to a container return facility (CRF).

Financial modelling for a NZ CRS indicates the gross scheme fee will cost approximately 8.8 cents per container. However, this estimate may be high (based on international scheme costs), and in any case, scheme net costs (ie, costs to consumers) are likely to be no more than 3 to 5 cents (+GST) per container.[37]

Scheme fees and the refundable deposit are likely to attract GST, which is non-refundable.

The actual scheme fee will be set once the scheme's managing agency is established and takes into account the market response to the scheme's operational needs.[38] Further analysis of the modelled scheme fees for New Zealand can be found in the interim regulatory impact statement.

How the scheme fees work

Beverage producers and retailers pass on some or all of the scheme costs to consumers when they purchase eligible, labelled containers. The price-setting negotiations between producers and retailers are commercially sensitive, so we can only assume 100 per cent of scheme costs are passed on to consumers, although this may not be true for all products (ie, all scheme costs may not be passed through to the purchase price).[39]

When consumers pay for their beverage products, this payment includes both refundable and non-refundable components of the scheme fees. The refundable deposit is the majority of the cost consumers pay up front. For example, under a 20-cent deposit scenario, the purchase price of a typical beverage is likely to increase by 23–25 cents per container + GST (a 20-cent refundable deposit and a non-refundable 3–5 cent scheme fee + GST).

Once beverage producers have recovered the scheme costs from consumers (often via retailers), they pay the per-container scheme fees (including the deposit value) to the scheme's managing agency. The managing agency distributes payments to the collection/redemption network (ie, to the CRFs where consumers redeem their containers for cash). This underpins the 'polluter pays' and 'producer responsibility' principles embedded in a CRS (ie, shifting the costs of recycling containers from councils and ratepayers to the producers, retailers and consumers of beverage containers).

Scheme fees can be offset in two ways:

- using unredeemed deposits from containers that have not been returned (deposit financial model)
- by producers only paying for deposits on containers that come back into the scheme (refund financial model).

The difference between these models is discussed further in the Proposed scheme financial model section.

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37 Assuming the 'deposit model' and a 20-cent deposit scenario.

38 Comparative scheme fees overseas can be found in the Reloop Global Deposit Book 2020, which provides a short summary of the headline information for every established scheme operating (noting that more schemes are still being implemented).

39 Different products have different price elasticities. In addition to the scheme cost that individual products might carry, market response may also cause some products to change format (eg, bottled water multipack sales may shift to those with fewer and/or larger containers).

Eco-modulation of the scheme fee

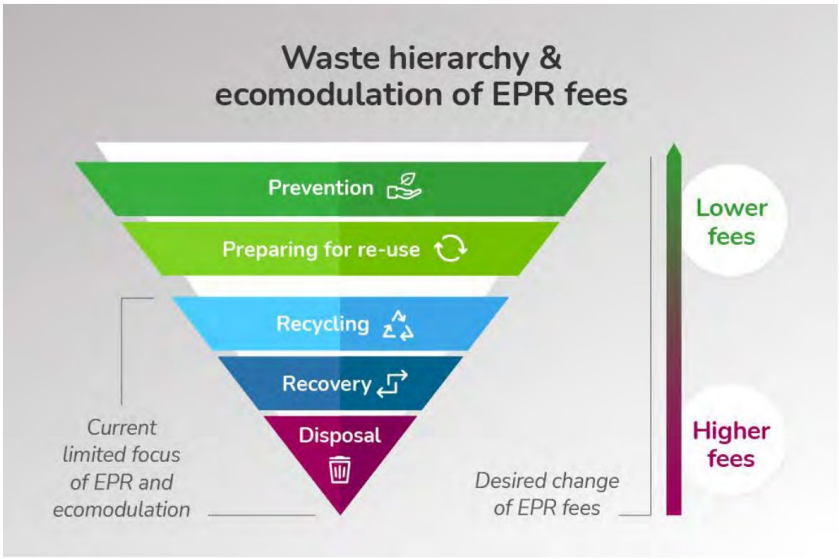
Product stewardship (often called 'extended producer responsibility' overseas) is a policy instrument that puts the responsibility of a product's entire life cycle – from designing environmentally friendly and low-impact products to managing their end-of-life – onto the producers of the product. It aims to internalise negative environmental costs and to shift the responsibility of managing products and their waste from taxpayers to producers.[40]

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

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 management and environmental costs.[41]

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 (figure 9). Products designed for enabling reduction and reuse 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.[42]

Figure 9: Waste hierarchy and eco-modulation of fees



40 OECD. 2005. *Analytical framework for evaluating the costs and benefits of extended producer responsibility programmes*. Paris: OECD.

41 Monier V, Hestin M, Cavé J, Laureysens I, Watkins E, Reisinger H, Porsch L. 2014. *Development of Guidance on Extended Producer Responsibility (EPR).* Brussels: European Commission. , p.97.

42 Sachdeva A, Araujo A, Hirschnitz-Garbers M. 2021. *Extended Producer Responsibility and Ecomodulation of Fees.* Ecologic Institute.

Source: Sachdeva et al., 2021

European case study – Eco-modulation of EPR fees

Many European countries are increasingly adopting initiatives and Extended Producer Responsibility (EPR, in New Zealand called 'product stewardship') policies to encourage better designed, sustainable products.

The European Commission (EC) presented a New Circular Economy Action Plan (CEAP) in March 2020, which included sustainable products as one of the key focal areas. It announced a sustainable product policy initiative (SPPI) to develop strong policy measures to ensure that only sustainable products are put into the European market (European Commission, 2021).

Many European EPR schemes incorporate fee modulation. For example:

- The Italian EPR scheme has different categories of fee modulation depending on whether the packaging is sortable and recyclable.
- Sweden uses sorting, processing and 'saleability' after sorting and processing (ie, demand and resale value in market) as criteria for modulation.
- The Netherlands uses lower fees for rigid plastic packaging made from Polyethylene (PE), Polypropylene (PP) or Polyethylene terephthalate (PET), which are all easier to recycle.
- France and Portugal issue bonuses or impose penalties depending on whether certain sortable and recyclable design features are used.

Eco-modulation of EPR fees is playing a crucial role in achieving the EC's objective to make sustainable products the norm.

Eco-modulation of scheme fees to be included within legislation for a NZ CRS

NZ CRS legislation is likely to include setting out the structure and function of a scheme's governance (including the roles and responsibilities of the scheme's managing agency) and operational requirements of the scheme (including forms of refunds).

In the context of the NZ CRS legislation, we propose that the scheme fees would be eco--modulated to reflect the actual end-of-life management costs to recycle all beverage containers, plus the associated environmental costs. The scheme fees would be modulated based on criteria linked to the waste hierarchy and/or modulated through specific scheme recycling targets to be developed alongside other scheme regulations. The modulation would encourage more sustainable product design and incentivise recyclable and, in the future, reusable packaging.

The NZ CRS should always prioritise container-to-container recycling solutions where possible, including to export markets if necessary, over downcycling.[43] It should also prioritise upstream processes – such as designing for reusability, reparability and durability – to facilitate the transition to a circular economy and waste prevention). In this context, eco-modulation of the

[43] 'Container-to-container' recycling recovers high quality food-grade packaging materials and recycles them into new food-grade containers, ideally of the same type, which creates a circular system. Downcycling refers to using recovered materials (in this case, beverage containers) to make other products which are less recyclable at end-of-life. This is less desirable, especially when the downcycled products do not reduce the demand for virgin non-renewable resources, such as plastics, glass and metals. Downcycling often leads to a less circular, linear material flow through the system, while still claiming to be 'recycling'.

scheme fees could also play a crucial role in incentivising upstream design changes and in incentivising producers to make products more sustainable.

For example, eco-modulation of the scheme fee could mean that producers of harder to recycle packaging such as liquid paperboard (LPB) and glass would likely have a slightly higher scheme fee, given there is limited market demand for the recovered materials onshore and they are more likely to be downcycled in New Zealand. On the other hand, eco-modulation would mean beverage producers using aluminium cans could have their scheme fees reduced as an incentive, given aluminium cans are a valuable commodity, highly recyclable, reduce emissions when recycled and have good circular potential.

If a NZ CRS proceeds, eco-modulation criteria and/or more specific recycling targets would need to be developed with industry and through further engagement and consultation on regulations.

Question

5 Do you support the inclusion of variable scheme fees to incentivise more recyclable packaging and, in the future, reusable packaging?

Beverage container materials proposed for inclusion

Deciding which beverage containers would be included in a NZ CRS is fundamental to the design of the scheme, because it determines which containers will be required to include a refundable deposit and can be returned for a refund. It also determines what beverage packaging types would be able to be sold in New Zealand. Beverage producers/importers would need to establish a contract with the scheme's managing agency, potentially through a licensing mechanism, in order to sell their beverage products in New Zealand.

As discussed, beverage consumers and producers would be required to pay a refundable deposit on all eligible containers at the point-of-sale, and this deposit would be passed on to the scheme's managing agency. Eligible containers would have specific conditions of acceptance, including a scheme label or identifying mark, a barcode, a QR code or other form of unique identification.[44]

About 90 per cent of overseas schemes include single-use beverage containers made of metal, plastic and glass. Some schemes, for example, in Australia and Canada also include liquid paperboard but may exempt certain product types irrespective of packaging material.[45]

New Zealand sales data show that in 2020/2021 New Zealanders bought an estimated 2.57 billion single-use beverages.[46] New Zealanders are also drinking more beverage products across every packaging category type (table 2). Over the past two years, sales volumes of all beverage products grew by 9 per cent and 7 per cent respectively. Metal (aluminium) containers have increased the most, with approximately 820 million containers sold annually. The growth of glass has been relatively flat, but it is still the top packaging choice for beverage

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44 Other specific conditions of acceptance would include size, type and material composition, implemented via legislation and regulation to manage the containers eligible as part of the respective scheme.

45 For example, most schemes exclude fresh milk irrespective of packaging type.

46 This also includes each individual beverage container sold within a multipack.

packaging in New Zealand, with 994 million containers sold in 2020/21, 92 per cent of which were alcohol products.

Table 2 New Zealand beverage container-type sales estimates (in millions)

Packaging type (beverage containers)	Plastic	Liquid paperboard	Metal	Glass	Total
2018/19 total estimated containers	515	147	547	982	2,192
2019/20 total estimated containers	572	164	677	986	2,398
2020/21 total estimated containers	587	168	820	995	2,570
Estimated growth in container volume 2018/19 – 2019/20	11%	11%	24%	0.4%	9%
Estimated growth in container volume 2019/20 – 2020/21	3%	3%	21%	1%	7%

Given the large number of beverages sold in New Zealand, a NZ CRS would ideally include recyclable beverage materials that have strong markets and existing recycling pathways in place. The NZ CRS would also ideally provide opportunities for growth in refillable product markets and support better recycling outcomes for all of the main container types where market barriers exist.[47]

Because a CRS will increase the amount of beverage container materials captured for recycling, it is important that recycling infrastructure is available for the collected materials. This includes viable end markets for the materials, which could be both onshore and offshore. Where materials are exported, they should be managed sustainably.

Consumer NZ research in 2020 found that 67 per cent of respondents said that it must be easy to understand which beverage containers are covered under the scheme. Most New Zealanders (64 per cent) also thought a NZ CRS should cover a broad scope of beverage materials, including plastic, glass and metal).[48]

This support for a broad range of container materials was also reflected in the 2019 consultation on proposals for priority products.[49] Most submitters (97 per cent) – and 85 per cent in business/industry – supported the inclusion of plastic, glass, metal and paperboard or mixed laminated materials being declared as priority products, which is the basis of a regulated product-stewardship scheme under the current Waste Minimisation Act (WMA, 2008).

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47 Further discussion on the proposed beverage container materials and market issues can be found in Appendix 1.

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

49 Ministry for the Environment. 2019. *Proposed priority products and priority product-stewardship scheme guidelines: Consultation document*. Wellington: Ministry for the Environment.

Glass, plastic, metal, and LPB beverage containers proposed for inclusion

Given the large number of containers sold into the market and the relatively low return rates for containers, a NZ CRS that includes a broad scope of container materials is likely to create an easy-to-understand, convenient and effective scheme for consumers and businesses. This approach will increase overall beverage container recovery, significantly reduce litter, and ensure a level playing field for beverage producers, reducing the risk of free riders.[50]

We propose that the NZ CRS would target the beverage container materials that are most frequently bought, under-recovered and littered, rather than specific product types. We therefore propose that all single-use beverage containers would be in scope of the scheme and eligible for a refund if they are made from one or more of the following frequently bought beverage container materials:

- glass
- plastic (PET, HDPE and PP only, and recyclable bio-based HDPE and PET)
- metal (eg, aluminium and non-ferrous metals such as steel, tinplate and bimetals)
- liquid paperboard (the only composite product proposed).

The beverage container materials outlined above are proposed to be in scope of a NZ CRS, and as noted on page 34, beverage producers/importers would need to establish a contract with the scheme's managing agency in order to sell their beverage products in New Zealand.

Appendix 1 gives more information on the container material types listed above.

Question

6 Do you agree with the proposed broad scope of beverage container material types to be included in the NZ CRS?

7 If you do not agree with the proposed broad scope (refer to Question 6), please select all container material types that you think should be included in the scheme.

- glass
- plastic (PET, HDPE, PP, and recyclable bio-based HDPE and PET)
- metal (eg, aluminium and non-ferrous metals such as steel, tinplate and bimetals)
- liquid paperboard

Proposed to be excluded at this stage

Most beverage containers that are 3 litres or smaller in New Zealand can be categorised into single-use plastic (PET, HDPE and PP), metal, glass and liquid paperboard containers. Beverage containers that are not within this material criteria likely constitute a small volume of 'niche' containers (eg, compostable plastics, biodegradable plastics, bladders and pouches). These

[50] For example, a study in Sweden found that some beverage producers changed their product material from PET to other plastics to avoid scheme costs.

beverage containers are often more difficult to recycle than conventional beverage containers made from the materials proposed to be included in the scheme.

Beverage containers that are not within the scope of the proposed NZ CRS are proposed to be excluded from the NZ CRS at this stage and, to be considered for inclusion, would need to be assessed on a case-by-case basis by the scheme's managing agency and government agency responsible for the scheme.

Current regulations in relation to priority products under WMA Section 22(1)(a) include prohibiting the sale of a priority product, except in accordance with an accredited scheme. While new bespoke legislation is proposed for a NZ CRS, this principle is proposed to be carried forward to manage the free-rider risk for a NZ CRS. If the principle were carried into CRS legislation, this would mean that without a contract and/or a licence from the scheme's managing agency (ie, if the product is not readily recyclable), the beverage packaging type would not be able to be sold in New Zealand. In this instance, the producer/importer would need to shift to a more recyclable packaging format that is accepted by the scheme.

If a NZ CRS proceeds, the scheme's scope of containers and a process for assessing new products would need to be developed with industry and through further consultation on possible regulations.

More information can be found in Appendix 1.

Beverage types proposed for exemption

Some beverage containers meet the proposed definitions of 'beverage' and 'beverage container' but are proposed to be exempt from a NZ CRS. This means that these containers 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 may still be subject to some level of regulation, including data reporting requirements. Other beverage containers may be determined to be exempt from the NZ CRS in the future.

Beverage containers intended for refilling

Some countries include refillable containers in their CRS, sometimes applying a lower refundable deposit to refillable containers than single-use beverages.[51, 52] However, most overseas schemes exempt refillable beverage containers. Refillable containers can be either integrated and/or complementary to a CRS and can share collection infrastructure (eg, CRF that accept both single-use and refillable containers).

In New Zealand, refillable containers will 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

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[51] There are different refillable models, including returnable packaging systems (eg, Swappa Crate for beer), refill by bulk dispenser models (eg, designated refill stations such as milk-vending machines).

[52] Refillable beverages are included in about a third of schemes globally. This includes schemes in Germany, Denmark, Netherlands, New York and many Canadian schemes. Overseas, lower fees are often applied to reusable/refillable beverage containers so that they have a lower deposit than single-use containers.

emissions and waste savings. Moving up the waste hierarchy from recycling and towards refill/reuse is aligned with the proposed waste strategy's vision for a circular economy in New Zealand by 2050. It will also help New Zealand achieve the targets proposed in the emissions reduction plan.

Some New Zealand businesses are considering or have already established (or re-established) their own return reuse/refillable networks for their products. This is a notable example of businesses taking the lead to develop a low-waste, low-carbon circular economy.

However, limited information is available on New Zealand's refillable/reusable systems. A large-scale refillable beverage system for New Zealand (either integrated within, or operating alongside a NZ CRS) would require new and different logistical management alongside national or regional collection and sterilisation infrastructure. Given the infrastructure costs associated with implementing a CRS, further investigation is required to understand how CRS infrastructure could support a future shift toward reusable/refillable containers. This includes consideration of how refillable beverage packaging could be incorporated within or alongside a NZ CRS.

We propose beverage containers that are intended for refilling and have an established return/refillables scheme would be exempted from the NZ CRS at this stage.[53] This means that refillable beverage containers would not be eligible within the scheme at the outset and would not include a refundable deposit. This would not prevent existing refillable systems (such as ABC Swappa Crate) from operating or stop new beverage producers from moving into the refillable market.

We are also proposing that future-proofing provisions for refillable containers would be included within any new CRS legislation. These provisions would enable refillable containers to be incentivised in the future once further work has been completed, for example, by using an eco-modulation fee and/or refillable targets. 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 per cent 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.

If a NZ CRS proceeds, further development of the terms 'refillable' and 'single-use' beverage containers would likely be needed at the regulation-making stage.

Fresh milk in all packaging types

For the purposes of this consultation document, '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 and soy). Fresh milk packaging is mainly HDPE plastic, with small volumes of PET, LPB and metal containers. Refillable glass containers are also making a come-back, which is positive given refillable containers typically have a much lower carbon footprint than single-use containers as long as they are refilled many times.

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[53] Further consideration would be given to the definition of refillable beverage containers at the regulation/legislation-making stage should a NZ CRS proceed.

Fresh milk accounted for about 7 per cent 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 per cent were sold in plastic. The remaining 3 per cent (5.5 million beverages) fresh milk beverages were sold in LPB packaging.

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

Fresh milk is proposed to be exempt

We propose fresh milk, as defined above, in all packaging types is exempt from the NZ CRS, and commercial (away from home) recovery will be encouraged in other ways. An exemption means that fresh milk would not be eligible for a refundable deposit and would not be able to be returned through the scheme. Fresh milk producers would still be able to sell their products in New Zealand outside of the NZ CRS.

For clarity, drinks that are not defined as 'fresh milk' such as plant-based milks and dairy-based drinks would still be included in the scheme. Non-cow milk (notably goat, nut, bean and other plant-based milks assumed to be predominantly sold in supermarkets) accounted for only about 3 per cent of all beverage containers sold in 2020/21 (73 million containers), and the materials include both plastic containers (39 million) and LPB containers (34 million).

Similarly, we propose that UHT long-life milk would be included within a NZ CRS, as it is not 'fresh' milk and mainly comes in harder to recycle LPB packaging, which is not proposed to be collected via kerbside recycling (see kerbside recycling proposals in Part 2).

Rationale for proposed exemption

A key reason to exempt fresh milk beverage containers from the NZ CRS is that a refundable deposit could have unwarranted financial impacts on households, who are already recycling most of their milk containers through kerbside recycling systems.

Fresh milk is also considered a staple product by many New Zealanders, whereas other beverages (such as fizzy drinks and alcohol) may be considered non-essential.[54] However, we understand that what is considered an 'essential' grocery item may be different for individuals, households and across cultures.

Unlike many other beverage containers, fresh milk is also 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 per cent of plastic fresh milk containers consumed at home were captured in kerbside recycling collections.

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.

[54] Fresh milk made up 13 per cent of non-alcoholic beverage sales and 30 per cent of the total plastic beverages sold in 2020/21.

Other options for improving fresh milk container recovery

Exempting fresh milk from a NZ CRS would reduce the amount of valuable HDPE plastic material collected for recycling. As noted, the main gap in the recovery of fresh milk containers is from the commercial and hospitality sectors.

During previous consultation on priority products in 2019, most submissions supported declaring beverage packaging a priority product. However, the decision was withheld, partly because a NZ CRS was being considered for beverage containers.[55] Given that we are proposing to exempt fresh milk from a NZ CRS, one option would be to include fresh milk beverages in all packaging formats as a declared priority product.[56] Another option would be through the review of the Waste Minimisation Act, and strengthen the obligations of commercial entities to, for example, separate all recyclable packaging waste, including milk bottles.

In any case, if milk is exempt from a CRS as proposed, further engagement will be needed with key stakeholders, such as fresh milk producers and the hospitality sector, to investigate and develop alternative options for increasing the commercial recovery of milk bottles, and to ensure that fresh milk beverage containers are not sent to landfills.

Questions

8 Do you support a process where alternative beverage container packaging types could be considered on case-by-case basis for inclusion within the NZ CRS?

9 Do you agree with the proposal to exempt fresh milk in all packaging types from the NZ CRS?

10 Do you support the Ministry investigating how to target the commercial recovery of fresh milk beverage containers through other means?

11 Do you support the Ministry investigating the option of declaring fresh milk beverage containers made out of plastic (eg, plastic milk bottles and liquid paperboard containers) a priority product and thereby including them within another product-stewardship scheme?

12 We are proposing that beverage containers that are intended for refilling and have an established return/refillables scheme would be exempt from the NZ CRS at this stage. Do you agree?

13 Should there be a requirement for the proposed NZ CRS to support the New Zealand refillables market (eg, a refillable target)?

14 Do you have any suggestions on how the Government could promote and incentivise the uptake of refillable beverage containers and other refillable containers more broadly?

15 Are there any other beverage packaging types or products that should be considered for exemption?

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55 Gazette Notice Number 2020-go3343.

56 The Minister for the Environment may declare a 'priority product' by issuing a Gazette notice under section 9 of the WMA. Once a product is declared, a product-stewardship scheme must be developed and accredited as soon as practicable.

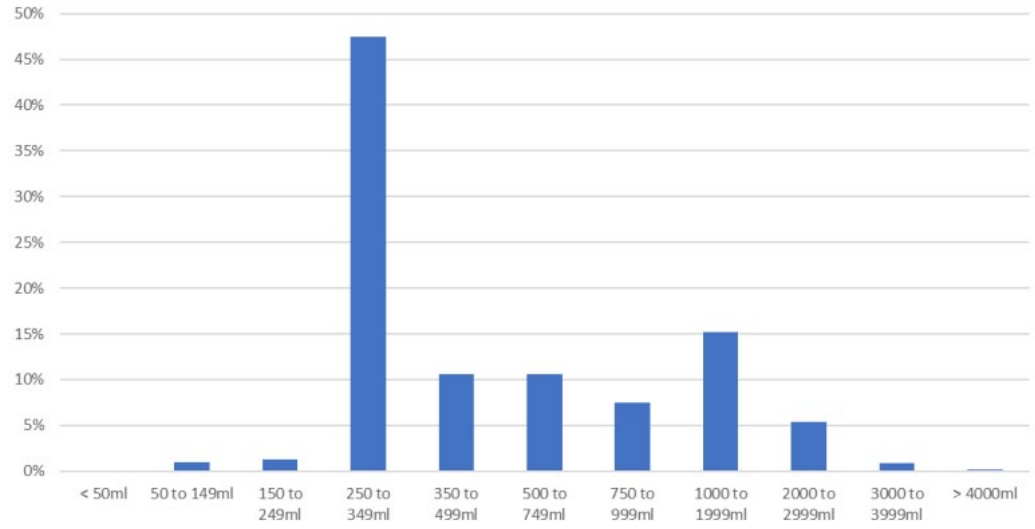
Container size

The size of eligible containers varies among overseas schemes. Many include all single-use beverage containers smaller than 3–4 litres, while Denmark includes all containers smaller than 20 litres.

In previous consultation on *Proposed priority products and priority product stewardship scheme guidelines* (2019), most submitters across all categories supported the inclusion of beverage containers with more than 50 millilitres and less than 4 litres of capacity. Some submitters wanted a narrower range of volumes, including suggestions for a higher minimum limit of 150 millilitres and a lower maximum limit of 3 litres. Others wanted no minimum volume and/or no maximum size to cater for larger 10- to 20-litre water containers.

Subsequent analysis of supermarket sales data has shown that almost half of all beverage containers sold via supermarkets are 250–349 millilitres and only 1 per cent are 3 litres or over (figure 10).

Figure 10: New Zealand supermarket beverage container size distribution (2020/21)



Proposed container size 3 litres or smaller

We propose that eligible beverage containers would be 3 litres or smaller. We propose that there would be no lower size limit for beverages (for example, small beverages that may be 50 ml and less would still be included in the scheme). This aligns with some overseas schemes including those in South Australia and Northern Territory. Many Canadian schemes specify container size under 5 litres.

As with exempted container material types, producers of containers over 3 litres are proposed to be exempted and may still be subject to some level of regulation, including data reporting requirements.

Appendix 1 contains additional information on container size.

Question

16 Do you agree that the size of eligible beverage containers would be 3 litres and smaller?

Beverage lids

Beverage lids and caps are often littered in New Zealand.[57] 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'.[58] In addition, reverse vending machines could be designed with slots for lids that cannot be reattached (eg, metal crown caps) or those that are found separate from their bottles (eg, in litter clean-ups). A 'lids-on' requirement would also limit odour and hygiene issues.[59] Overseas, a lids-on requirement for beverages that are able to have their lids fastened back on tends to see a higher total volume of lid recycling, because it is easiest for consumers if lids and containers are kept and recycled together. Alternatively, beverage lids could be removed ('lids off') by the consumer at the point-of-return and collected by the CRF. In any case, the scheme's managing agency would be responsible for ensuring that lids are recycled.

Separate lid collection through a NZ CRS could help to ensure clean and uncontaminated streams of lids are received for processing and recycling. However, there would be less incentive to return lids separately, and processors could remove the lids through mechanical separation later.

We propose 'lids on' should be encouraged

In order to reduce the number of lids that end up as litter and to increase the recycling rate of lids, we propose that beverage containers are 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 CRFs.

We recognise that some beverage containers, such as aluminium cans, are unable to have their lids put back on. 'Lids on' is not proposed to be a legislative requirement, but it would be allowed, preferred and encouraged, and a beverage container without a lid could still be returned for a refund. To mitigate lid litter, we are proposing that the scheme's managing agency would still be responsible for supporting the recycling of loose lids via identified pathways, and the scheme would provide alternative means to capture and recycle lids where they are not able to be returned on the beverage container. This could include using opportunities in the CRS collection network.

We are interested in hearing more about how we could collect beverage container lids through a NZ CRS. We are seeking your feedback on how the scheme could provide means to capture and recycle beverage container lids that cannot be put back on the container.

Appendix 2 contains additional information on lids.

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57 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 1000m²). Plastic bottle tops were also frequently littered (729 in total).

58 Older schemes, such as in South Australia, are exemptions.

59 Flavoured milk and wine bottles in particular can become odorous if not rinsed properly.

Questions

17 Do you think that consumers should be encouraged to put lids back on their containers (if possible) before they return them for recycling under the scheme? 18 Do you agree that the scheme should provide alternative means to capture and recycle beverage container lids that cannot be put back on the container? If so, how should they be collected?

Proposed recovery network design

A key part of a CRS is creating a network of return points, or CRFs, for consumers and businesses to return their empty beverage containers and to redeem their deposit. Each CRF type is developed to suit certain situations, container volumes and customers. Typically, consumers can return their eligible containers to any participating CRF for a refund; it does not have to be the same place the beverage was purchased.

The main CRF network for a CRS is established only once. The number and location of CRFs can change over time, but the core system effectiveness and efficiency, and the network carbon footprint, are all largely established during the legislation and implementation stage. An efficient, convenient, low-carbon network requires that most people can return containers to places they already frequently visit that can be well managed as a redemption site.

A CRF's accessibility (eg, its hours of operation) and customer convenience (eg, location and travel distance) are also critical to the scheme's overall effectiveness and efficiency. The easier it is for people to return eligible containers, the more containers are likely to be recovered, and the more affordable the scheme is for consumers because they can get their refundable deposits back more easily.

The main types of container return facilities (CRF)

Reverse vending machine (RVM)

- An automated vending machine accepts empty containers (up to 100 per minute in standard models).
- The technology can accurately verify, count and sort containers by material type.
- Machines are typically set up inside or outside retail locations and can be sized for low, medium and high-volume sites.

Over the counter

- Small volumes of containers are received/redeemed by small businesses (eg, dairies).
- Any manually counted containers are then shipped to a depot for electronic verification and aggregation.

Depot (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.
- Depots generally cater for large private and commercial-scale customers, such as collections from charity drives, hotels, bars and restaurants.

CRF operators receive a handling fee to cover the costs of collecting, sorting, storing, packaging and transporting returned containers. The handling fee would be determined by market-driven costs of the not-for-profit scheme. However, the handling fee has been modelled at 6.3 cents per container based on international schemes.

For more information, see the Scheme fees section.

Mandatory or voluntary retail participation

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

For example, in Lithuania all retailers with a shop floor size of over 300m^2 that sell beverages are required to take back containers. The requirement applies to rural stores over 60m^2 to capture smaller stores like dairies in areas that may not have large supermarkets. In Germany, retailers with stores over 200m^2 that sell beverages are mandated to take back containers. In Scotland, all retailers that sell drinks have a legal requirement to accept returns of empty drink containers for recycling (unless exempted).[60]

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 (17 cent deposit) and Germany (42 cent deposit) recover approximately 92 per cent and 98 per cent of beverage containers, respectively, despite having very different deposit amounts.

Depending on the scheme design, mandatory return-to-retail legislation typically applies to retailers who sell beverages, or a subset of retailers determined by criteria (eg, supermarkets with a floor space above a certain size). Mandatory return-to-retail requirements have been done in a number of different ways, including:

- All retailers (of any type) that sell beverages are mandated to take beverage containers back.
- All retailers that sell beverages and are larger than a certain size (eg, shop floor area in m^2 or an annual turnover threshold) must take beverage containers back. Different size thresholds can also be applied for urban and rural communities.
- All retailers that sell beverages and have a certain retail format (eg, only supermarkets) must take beverage containers back.

In addition, a CRS can also provide exemptions for certain retailers. Exemptions can include limiting take-back requirements to the packaging types (or even brands) that each retailer sells, and limiting take-back container numbers per customer, for health and safety or food safety reasons, or where another CRF point is nearby.

60 https://depositreturnscheme.zerowastescotland.org.uk/information-retailers

Mandatory return-to-retail legislation for a New Zealand scheme could:

- only apply to larger retailers or supermarkets (such as those exceeding a specific floor area, which could differ for urban and rural communities)[61]
- include or exclude small retail stores, such as convenience stores and dairies
- provide conditions and/or exemptions for retailers (eg, for health and safety, or food safety reasons, or where there is another CRF point nearby (eg, within 500m).

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.

Indicative procurement and infrastructure ownership options for retailers

100 per cent contract-for-service model

- Low establishment costs, forgo handling fee revenues entirely

Mixed procurement model

- Some establishment costs (eg, lease the RVM technology using a portion of the handling fee) and operate the site themselves, retaining some of the per-container handling fee to cover costs

Owner-operated CRF

- All establishment costs in order to own and operate all aspects of the CRF and therefore receive all of the handling fee

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

In comparison, schemes without mandatory return-to-retail regulations rely on existing and new businesses voluntarily choosing to establish a return point in the market (the 'voluntary return-to-retail'/depot model). 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).[62] The business opportunity of generating revenue through handling fees encourages operators to enter the return-point (usually depot) market and participate in the network procurement process when the scheme is established.[63]

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

62 As outlined above, the handling fee is paid to CRF operators to cover the costs of collecting, sorting, storing, packaging and transporting returned containers.

63 Under a voluntary return model, the scheme's managing agency typically manages the procurement of return points.

While the voluntary return-to-retail model has some merits, the associated network is often less convenient for consumers with relatively fewer sites per person. 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 per cent) return rates and would increase vehicle movements (and associated emissions) because many more consumers have to travel farther and to sites they would not normally visit to return their beverage containers.

We recommend a mixed-return model

Evidence shows that convenient return points, which are provided by return-to-retail requirements, are a key design consideration in a CRS to drive higher recovery rates. However, we do not think that all retailers that sell beverages in New Zealand need to act as CRFs.

Initial geo-spatial analysis (using 679 urban and rural supermarkets across New Zealand as an example)[64] has shown that on average:

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

Similarly, approximately 89 per cent of New Zealanders live within 5 kilometres of a supermarket, and 95 per cent 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, emissions-efficient and convenient return points for containers.

Moreover, GS1 estimates that New Zealand supermarkets alone sold about 1.38 billion beverage containers in 2019/20 (57 per cent of the beverage container market) and 1.41 billion in 2020/21 (54 per cent of the market).[65]

Given that supermarkets are the primary sales channel for beverages, and are convenient to most New Zealanders, it makes sense that they could take more responsibility for the products they sell through a network with a degree of mandated take back (return-to-retail).

In a 2020 survey by Consumer NZ, 70 per cent of respondents said that supermarkets would be the most convenient place to return containers in New Zealand (figure 11).[66]

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64 Countdown, Four Square, Fresh Choice, New World, Pak'n Save and SuperValue.

65 GS1 New Zealand provide New Zealand businesses with global data standards and solutions for efficiently identifying, capturing and sharing product information.

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

Figure 11: Beverage container return scheme survey results

Source: Consumer NZ, June 2020

Additional return options for people who are not close to a supermarket[67] could include:

- depot return points set up to receive both commercial volumes and consumer drop-offs (eg, run by large and small business operators, recyclers, charities and community groups)
- voluntary retail participation through other/smaller retailers (such as dairies, petrol stations and bottle stores).

We propose the NZ CRS uses a mixed-return model with a higher degree of mandated retail participation for supermarkets. This model would ensure a high level of accessibility and convenience for most consumers to return containers, while still offering the opportunity for voluntary participation to hapū/iwi, recyclers, community organisations, charities and entrepreneurial businesses.[68] If the network is designed to ensure wide-ranging participation and resource recovery at the local level, there would also be opportunities to participate in the network through establishing voluntary return points (such as depots to service commercial recovery volumes, or over-the-counter return facilities who would fill service-level gaps in the network).

The mixed-return model would provide accessible and convenient (and importantly, transport and emissions-efficient) return points at places that people regularly visit. Supermarkets are also well-located to service most of New Zealand, including rural communities, which will help to ensure good network coverage for at least 95 per cent of New Zealanders. In a mixed-return model, most return points (in supermarkets) would be established through regulations.

The scheme-managing agency would procure and approve additional voluntary return points, including depots. The business case for a depot would need to show that it would be a viable operation. Depots would target commercial volumes so, while there may be fewer of them, they would still be expected to manage significant volumes per site. They would more likely be located in less convenient locations for consumers, such as industrial zones, and they could be set-up cost efficiently by leveraging existing infrastructure (such as scrap metal yards and community recycling facilities). Depots will need to accept all scheme materials to be an official scheme return point. Depots could also potentially be leveraged in the future to operate an expanded CRS or receive products from other product-stewardship schemes.

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67 Estimated to be less than 5 per cent of New Zealand's population.

68 Note that financial modelling is based on 50 additional depot CRFs in addition to 679 return-to-retail CRFs.

Questions

19 Do you agree that a NZ CRS should use a 'mixed-return model' with a high degree of mandated retail participation to ensure consumers have easy access to container return/refund points, as well as the opportunity for voluntary participation in the network by interested parties?

20 Where would you find it easiest to return eligible beverage containers? Please select all that are relevant and rank these from most preferred.

- commercial recycling facility (eg, depot, more likely to be located in industrial zone)
- waste transfer station
- other community centres/hubs (eg, town hall, sports club, etc)
- local retail outlet that sells beverages (eg, dairy, convenience store, bottle shop, petrol station)
- supermarket
- community recycling/resource recovery centre
- shopping centre/mall
- other (please specify)

Which retailers should be required to take back eligible containers?

We are seeking feedback on the degree of mandatory retail participation in a NZ CRS.

In particular, what size and type of retailer should be required to take back containers? For example, should only large retailers that sell significant volumes of beverages (eg, supermarkets) be required to take back eligible containers, or should liquor outlets and some smaller retailers (such as convenience stores and dairies) also be required to take back containers?

Overseas schemes (such as in Europe), commonly use shop floor size (m^2) to determine which retailers are mandated to take back containers. Different thresholds can apply for urban and rural communities.

Questions

21 Retailers that sell beverages are proposed to be regulated as part of the network (mandatory return-to-retail requirements). Should a minimum store size threshold apply?

And, if yes, what size of retailer (shop floor) should be subject to mandatory return-to-retail requirements?

- over 100m^2 (many smaller dairies likely exempt)
- over 200m^2 (many dairies and some petrol stations likely exempt)
- over 300m^2 (many retailers, dairies, petrol stations and smaller supermarkets likely exempt)

22 Do you think the shop-floor-size requirements for retailers required to take back beverage containers (mandatory return-to-retail) should differ between rural and urban locations?

If yes, what lower size threshold should be applied to rural retailers for them to be required to take back containers?

- Over 60m^2 (as in Lithuania)

- Over 100m² (many smaller dairies likely exempt)
- Over 200m² (many dairies and some petrol stations likely exempt)
- Over 300m² (many retailers, dairies, petrol stations and smaller supermarkets likely exempt)

23 Do you agree that there should be other exemptions for retailer participation? (For example, if there is another return site nearby or for health and safety or food safety reasons).

Proposed scheme financial model

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.

A CRS shifts the costs of recycling and resource recovery away from councils and ratepayers to the responsible supply chain (ie, beverage producers and manufacturers, retailers and consumers of the beverages). The best way to think about the financial model is as a flowing system (figure 12).

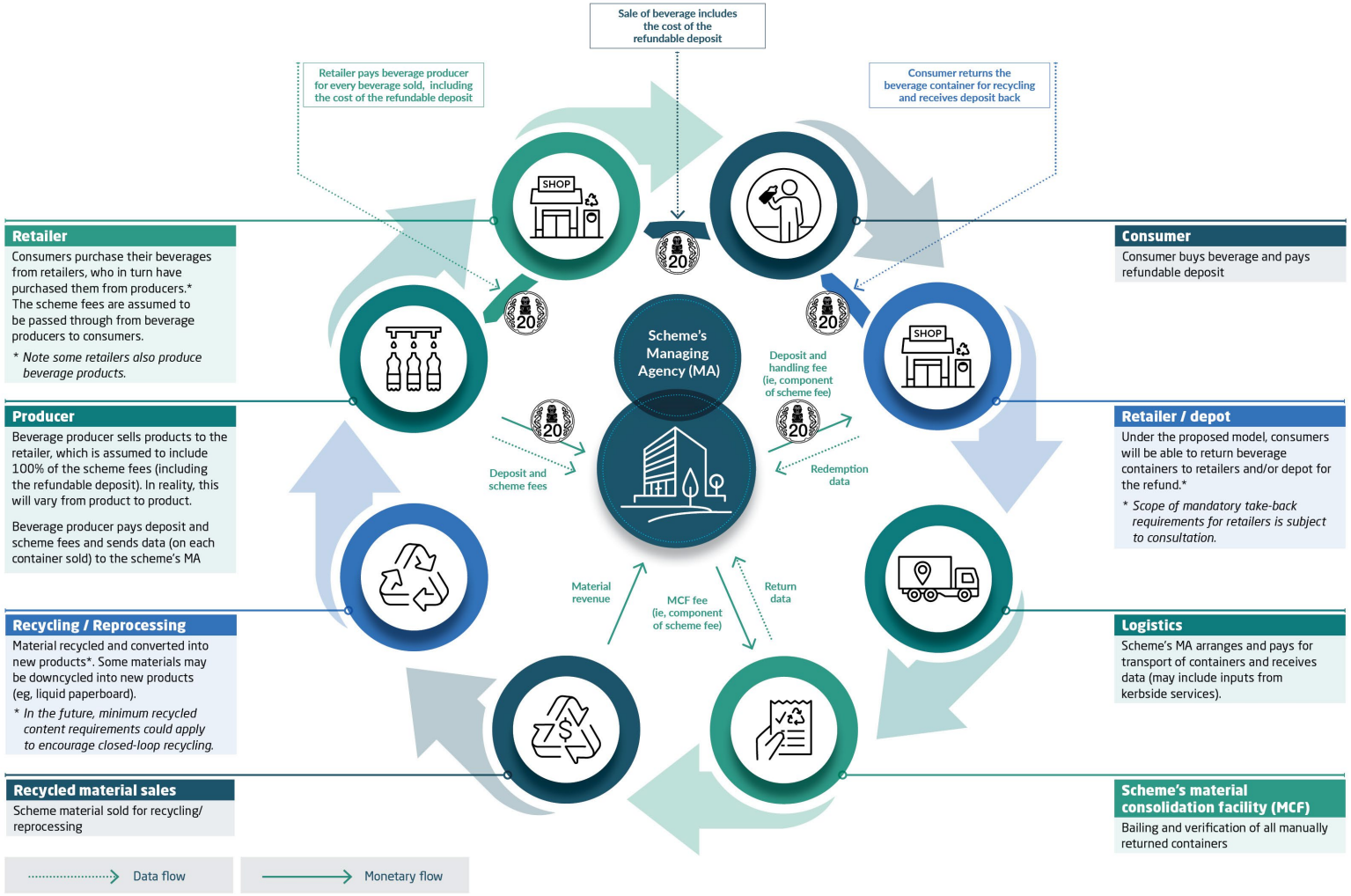
To start a scheme, an investment by the scheme's (not-for-profit) managing agency is needed to cover the upfront costs, including the establishment of the scheme's core infrastructure and the managing agency's operational costs. Over time, these upfront costs will be recovered by the managing agency 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 managing agency. These companies are responsible for financing the managing agency's establishment costs.

The scheme itself can then have 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 scheme fees for any eligible beverage containers that they place on the domestic market.

Deposit model is our preferred option

We are proposing that the NZ CRS would have a **deposit financial model**. 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 ensures that beverage producers are not incentivised towards lower return rates. Most of the best-performing schemes globally (eg, European schemes) use a deposit financial model.

Figure 12: NZ CRS scheme flows (deposit financial model)



Note: In addition to the refundable deposit, scheme fees are also included and are not shown in this diagram. Please see the Scheme fees section.

The deposit model is one way that a CRS can more strongly enact product-stewardship principles. It 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. It has the added benefit of ensuring the scheme's deposit float is self-funding from the outset.

The deposit model increases the start-up cost to beverage producers at the outset of a scheme. To mitigate this, producers and retailers would be allowed to sell eligible beverages with refundable deposits before the scheme starts, so that producers can recover costs from consumers and pay them into the managing agency before the scheme commences.

Furthermore, beverage containers that are not redeemed by the consumer for the refund (for example, that go to landfill or litter) would also be used by the managing agency to offset the scheme's operating costs. This would lower the scheme fees for consumers at the point of purchase.

Refund model

Under the refund model, beverage producers would only pay the deposit fee and scheme fees for the number of containers returned for recycling. For example, if only 50 per cent of containers sold to market are returned through a CRS, the beverage producer would only need to pay 50 per cent of the deposit amount to the managing agency. However, scheme fees would be higher as there would be no unclaimed deposits to offset the scheme fee cost.

Although the refund model reduces the up-front financial contribution for beverage producers to the CRS, the risk is that producers managing the scheme are incentivised towards lower return rates over the life of the scheme (ie, 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.[69]

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

As return rates increase over time, the two financial models become more similar, although the tension remains in a scheme established using the refund financial model.

Question

24 Do you agree with the proposed 'deposit financial model' for a NZ CRS?

[69] 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.

Proposed model for managing and governing the scheme

Who manages container return schemes?

Container return schemes are usually managed by an external organisation, appointed by the Government, for the purpose of managing and overseeing the scheme.

A scheme's 'managing agency' 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 NZ CRS.

Many schemes include a governance board, which is responsible for ensuring the scheme meets or even exceeds the scheme's requirements as set out in legislation or regulations.

The leadership of the managing agency can be one, or a combination of key stakeholders such as:

- beverage producers
- retailers
- recyclers
- government
- others.

While there may be a dominant group or groups represented in the governance and leadership of a scheme, governance can be more broadly representative, including consumers and representatives of iwi and community groups.

Governance of overseas CRS

Most overseas container return 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.

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.

Split structural models have been used in Australia (eg, New South Wales) to better manage tensions 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).

Who would manage the NZ CRS?

The structure and function of a scheme's governance is usually prescribed in legislation, which clearly outlines the roles and responsibilities of the managing agency (including the governance board where appropriate). Legislative requirements for the establishment of the managing agency could include:

- how to apply to be the scheme's managing agency
- the scheme commencement date
- recovery targets and any statutory performance drivers
- fraud-management requirements (including penalties)
- scheme reporting and review requirements.

In addition, legislation is also likely to set out operational requirements for the scheme, such as the deposit amount, forms of refunds, scope of containers, conditions of acceptance for containers (including labelling requirements), requirements for collection points, and roles and responsibilities for all scheme participants.

Proposed governance – a not-for-profit, industry-led scheme

The governance model options for a NZ CRS are best considered in light of other design considerations, such as the deposit amount and network design, to ensure overall balance within the design.

Considering the proposed regulated scheme design elements proposed in this consultation document – especially the mandatory return-to-retail regulations, the 20-cent deposit amount, and the deposit financial model – we propose that a NZ CRS should also be a not-for-profit, industry-led scheme. This recognises the robust regulatory framework and provides opportunity for the industry to operate the scheme as efficiently as possible.

The NZ CRS could be led by retailers, beverage producers, recyclers or any combination of industry representatives. The structure provided by key regulated design elements creates the framework necessary for high recovery rates.

We would expect the scheme governance to be well-balanced among members from different industry sectors, particularly beverage producers and retailers.

Central government would play a key role in the establishment of a scheme, then moving into an oversight role. Legislation would set out requirements for a government agency (such as the Ministry for the Environment) to act as the central regulator for the scheme. The regulator's role would be to receive reports from the scheme's managing agency, review the scheme's management and performance (including whether it is meeting any legislated recovery targets).

A range of government agencies would be involved in the establishment of a scheme, and the lead agency is proposed to be the Ministry for the Environment.

We propose that scheme fees would consider costs to the regulatory agency (or agencies) for compliance, monitoring and enforcement as well as other government costs (so that these are not borne by taxpayers).

Question

25 Do you agree that a NZ CRS would be a not-for-profit, industry-led scheme?

Recovery targets

Many overseas schemes include targets in their legislation to help drive the recovery of eligible beverage containers and hold the scheme's managing agency 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
- suspending or cancelling the appointment of the managing agency
- increasing the deposit amount if targets are not met
- increasing the number of return points if targets are not met.

Proposed recovery targets

To ensure the success of a NZ CRS, we recommend that a recovery target of 85 per cent of beverage containers is achieved by year 3 following scheme implementation, and a 90 per cent recovery target by year 5 (assuming the design characteristics of a high-performing scheme are incorporated as proposed).

We propose that if these targets are not met at either year 3 or 5, or maintained after year 5, then the Government would review the proposed deposit amount of 20 cents and the structure of return points and consider an increase in the deposit amount.[70]

Questions

26 Do you agree with the recovery targets for a NZ CRS of 85 per cent by year 3, and 90 per cent by year 5?

27 If the scheme does not meet its recovery targets, do you agree that the scheme design (including the deposit level) should be reviewed and possibly increased?

28 Do you support the implementation of a container return scheme for New Zealand?

29 If you do not support or are undecided about a CRS, would you support implementation of a scheme if any of the key scheme design criteria were different? (eg, the deposit amount, scope of containers, network design, governance model, scheme financial model, etc). Please explain.

30 If you have any other comments, please write them here.

[70] International modelling shows that the deposit level is one of the key drivers to high recovery rates in a CRS.

Recap of questions: Container Return Scheme

Full submission

Questions

1 Do you agree with the proposed definition of a beverage?

2 Do you agree with the proposed definition of an eligible beverage container?

3 Do you support the proposed refund amount of 20 cents?

4 How would you like to receive your refunds for containers? Please select all that are relevant and select your preference.

- cash
- electronic funds transfer (eg, through a scheme account or mobile phone app)
- vouchers (for cash or equivalent value product purchase)
- donations to local community organisations/charities
- access to all options
- other (please specify)

5 Do you support the inclusion of variable scheme fees to incentivise more recyclable packaging and, in the future, reusable packaging?

6 Do you agree with the proposed scope of beverage container material types to be included in the NZ CRS?

7 If you do not agree with the proposed broad scope (refer to Question 6), please select all container material types that you think should be included in the scheme.

- glass
- plastic (PET 1, HDPE 2, PP 5, and recyclable bio-based HDPE and PET)
- metal (eg, aluminium and non-ferrous metals such as steel, tinplate and bi-metals)
- liquid paperboard

8 Do you support a process where alternative beverage container packaging types could be considered on case-by-case basis for inclusion within the NZ CRS?

9 Do you agree with the proposal to exempt fresh milk in all packaging types from the NZ CRS?

10 Do you support the Ministry investigating how to target the commercial recovery of fresh milk beverage containers through other means?

11 Do you support the Ministry investigating the option of declaring fresh milk beverage containers made out of plastic (eg, plastic milk bottles and liquid paperboard containers) a priority product and thereby including them within another product-stewardship scheme?

12 We are proposing that beverage containers that are intended for refilling and have an established return/refillables scheme would be exempt from the NZ CRS at this stage. Do you agree?

13 Should there be a requirement for the proposed NZ CRS to support the New Zealand refillables market (eg, a refillable target)?

14 Do you have any suggestions on how the Government could promote and incentivise the uptake of refillable beverage containers and other refillable containers more broadly?

15 Are there any other beverage packaging types or products that should be considered for exemption?

16 Do you agree that the size of eligible beverages containers would be 3 litres and smaller?

17 Do you think that consumers should be encouraged to put lids back on their containers (if possible) before they return them for recycling under the scheme?

18 Do you agree that the scheme should provide alternative means to capture and recycle beverage container lids that cannot be put back on containers? If so, how should they be collected?

19 Do you agree that a NZ CRS should use a 'mixed-return model' with a high degree of mandated retail participation to ensure consumers have easy access to container return/refund points, as well as the opportunity for voluntary participation in the network by interested parties?

20 Where would you find it easiest to return eligible beverage containers? Please select all that are relevant and rank these from most preferred to least preferred.

- Commercial recycling facility (eg, depot, more likely to be located in industrial zone)
- Waste transfer station
- Other community centres/hubs (eg, town hall, sports club, etc@Yes, sorry everyone
- Local retail outlet that sells beverages (eg, dairy, convenience store, bottle shop, petrol station)
- Supermarket
- Community recycling/resource recovery centre
- Shopping centre/mall
- Other (please specify)

21 Retailers that sell beverages are proposed to be regulated as part of the network (mandatory return-to-retail requirements). Should a minimum store size threshold apply?

And if yes, what size of retailer (shop floor) should be subject to mandatory return-to-retail requirements?

- Over 100m^2 (many smaller dairies likely exempt)
- Over 200m^2 (many dairies and some petrol stations likely exempt)
- Over 300m^2 (many retailers, diaries, petrol stations and smaller supermarkets likely exempt)

22 Do you think the shop-floor-size requirements for retailers required to take back beverage containers (mandatory return-to-retail) should differ between rural and urban locations?

If yes, what lower size threshold should be applied to rural retailers for them to be required to take back containers?

- Over 60m² (as in Lithuania)
- Over 100m² (many smaller dairies likely exempt)
- Over 200m² (many dairies and some petrol stations likely exempt)

- Over 300m² (many retailers, dairies, petrol stations and smaller supermarkets likely exempt)

23 Do you agree that there should be other exemptions for retailer participation? (For example, if there is another return site nearby or for health and safety or food safety reasons.)

24 Do you agree with the proposed 'deposit financial model' for a NZ CRS?

25 Do you agree with a NZ CRS that would be a not-for-profit, industry-led scheme?

26 Do you agree with the recovery targets for a NZ CRS of 85 per cent by year 3, and 90 per cent by year 5?

27 If the scheme does not meet its recovery targets, do you agree that the scheme design (including the deposit level) should be reviewed and possibly increased?

28 Do you support the implementation of a container return scheme for New Zealand?

29 If you do not support or are undecided about a CRS, would you support implementation of a scheme if any of the key scheme design criteria were different? (eg, the deposit amount, scope of containers, network design, governance model, scheme financial model, etc). Please explain.

30 If you have any other comments, please write them here.

Part 2:

Te whakapiki i te hangarua paeara ā-kāinga

Improvements to household kerbside recycling

Improving household kerbside collections

Household kerbside collections are the rubbish and recycling that is collected from households weekly or fortnightly. It is the main way most households dispose of the rubbish they create and recycle. By using recycling collections, households can divert waste from landfills, which in turn reduces greenhouse gas emissions.[71] A typical household kerbside recycling service collects 'dry' recycling (paper and cardboard, metal, glass and plastic). Some councils also offer organic recycling, which is the collection of food scraps and garden waste. We are proposing to improve the performance of household kerbside collections.

Household kerbside collections are underperforming

Some countries in the OECD recycle and compost more than half of their household kerbside waste.[72] High performers, such as Wales, collect two-thirds of household kerbside material for recycling and only one-third is sent to landfills.[73] In New Zealand, we recycle and compost only about one-third of kerbside materials and two-thirds is sent to landfills.[74] Contamination levels in recycling are also high. Contamination occurs when unrecyclable items, dirty recyclables, or partly full containers are placed in recycling bins.

What needs to change?

We need to recycle as much as possible, without compromising the quality of the material, to reduce our use of natural resources. We need to divert more food waste from landfills to reduce emissions and then turn it into compost or other products that replenish the soil. We also need to build up trust and confidence in our recycling systems so that people are motivated to recycle and know how to recycle correctly.

As a country, we need to be realistic that only materials that can be recycled now and those that are in demand should be collected. At the same time, we need to ensure recyclable materials, such as polypropylene (plastic 5, which New Zealanders will recognise as the plastic used for larger yoghurt and ice cream tubs), are collected everywhere in New Zealand. The kerbside system will also need to be able to adapt and collect more materials in the future,

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71 Recycling typically reduces greenhouse gas emissions in two ways: reducing emissions from landfills and reducing emissions from making new products. When sent to landfills, organic materials (such as food scraps, garden waste, paper and cardboard) decompose anaerobically, releasing methane, a potent greenhouse gas. Using recycled materials instead of virgin materials typically requires less energy to make a given amount of product, reducing greenhouse gas emissions related to raw material extraction and production.

72 OECD. 2020. *Environment at a glance: Circular economy, waste and materials*. Environment at a Glance: Indicators.

73 Welsh Government. My Recycling Wales – Local authorities https://myrecyclingwales.org.uk/local-authorities

74 Yates S. 2019. *Rethinking rubbish and recycling*. Prepared for the WasteMINZ TAO Forum by Sunshine Yates Consulting. Auckland: WasteMINZ.]

as technologies change and new solutions are developed that make collecting these materials more viable.

Work undertaken to date

In 2017, China placed restrictions on the importation of recyclable materials to focus on developing its own circular economy. This led to a contraction in global markets and lower prices for recycled materials. As a result, industry, and local and central government decided to work together to identify solutions to improve the quality of recycling being collected and to ensure ongoing access to end markets.

In 2019, the National Resource Recovery Taskforce recommended reviewing New Zealand's kerbside collections to increase recovery rates and reduce contamination.[75] The industry body WasteMINZ worked with recyclers and local government to identify a standard set of materials that could be collected by all councils in New Zealand and to determine what else could be done to improve the quality and quantity of household kerbside recycling. The recommendation to standardise kerbside recycling[76] was adopted by Local Government New Zealand in its 2020 Waste Manifesto,[77] which called for central government to:

> Identify and promote best practice systems for collection of recycling, organic waste and rubbish, including a standard set of materials that are collected. This should be supported by appropriate resourcing and mechanisms that will enable councils to adopt best practice systems and ensure that materials are recovered consistently around the country.

In response, the Government has developed this consultation document and invites your feedback on the best ways to improve the outcomes and resilience of our kerbside recycling systems, and to reduce our climate emissions from waste.

Policy objectives

The proposals below aim to improve household kerbside recycling performance. This will in turn achieve the government policy objectives of lowering emissions to prevent and limit further impacts from climate change and moving to a circular economy in which no materials are wasted.

Specifically, these proposals will:

- increase the quantity of dry recycling and food scraps placed in household kerbside recycling
- reduce contamination and increase the quality of materials collected in household kerbside recycling
- increase public engagement and confidence in household kerbside recycling.

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75 Ministry for the Environment. *2018 B-04894 National Resource recovery taskforce New Zealand's options in response to effects created by the implementation of the National Sword Policy.* https://environment.govt.nz/assets/Publications/national-resource-recovery-briefing-note-v2.pdf

76 Pritchett S, Yates S. 2020. Recommendations for standardisation of kerbside collections in Aotearoa. Prepared for the Ministry for the Environment by WasteMINZ. Wellington: Ministry for the Environment.

77 Local Government Waste Management Manifesto 2020 Update: Developed by the Territorial Authorities' officers forum, a sector group of WasteMINZ www.wasteminz.org.nz/wp-content/uploads/2022/02/Local-Government-Waste-Manifesto-2020.pdf

What we are seeking feedback on

Six proposals to improve household kerbside recycling performance are discussed. While each proposal can be implemented on its own, together they are designed as an integrated package to lift the performance of New Zealand's household kerbside collections to international best practice.

This consultation document presents the Government's proposed way forward, which has emerged from a wide range of options considered. Analysis of these options can be found in the interim regulatory impact statement.

We would also like feedback on whether any other options considered could be as effective as those proposed. For example, councils and collectors could work together and effect changes voluntarily. Voluntary standardisation has been proposed in the past and, while some progress has been made, national consistency has yet to be achieved.

Our proposals

Given that kerbside collections are the main way for households to recycle effectively, we propose the following:

- all household kerbside recycling should collect a standard set of materials so that you can recycle the same materials everywhere in the country
- all urban households should have access to a food scraps collection.

To ensure these core proposals work, we also propose:

- that reporting on performance occurs, to understand how well collections are performing and how they might be improved
- councils have minimum and stretch targets (or performance standards) to enable clear performance expectations and to drive best practice
- councils have flexibility on how to meet these targets. However, we want to understand whether glass and paper/cardboard should be collected separately, because this increases the quality and quantity of material recycled.

We are also seeking views about whether all councils should be expected to provide household kerbside recycling services. Councils can either provide the services themselves or (more commonly) contract a collection company to provide the services.

We recognise that local government will need support to make these changes, and that small and rural communities face particular challenges. We also need to motivate and upskill New Zealanders to recycle better, reduce their food waste and make sustainable choices around what they buy.

Who will benefit from these changes?

Households will:

- have clarity about what can be recycled and how (affecting product choice and disposal)
- have confidence that materials collected for recycling are actually recycled and produce high quality outcomes, reducing environmental impacts

- have access to easy-to-use dry and organic recycling options.

Packaging producers and product retailers will:

- have clarity about what can be recycled and how (affecting packaging design and material selection)
- be able to demonstrate reduced environmental impact by using recycled and recyclable materials.

Councils will:

- efficiently achieve quality waste minimisation outcomes
- understand how well their collections are performing.

Waste management and recycling companies will:

- produce high quality and valuable recycling and soil amendment products[78]
- experience less contamination, which will improve the quality and reduce the amount of material that cannot be recycled
- have confidence in a consistent supply of high-quality recyclables and food scraps for reprocessing.

Users of recycled materials will:

- have confidence in the consistent supply of high-quality dry and organic recycled materials.

[78] Soil amendment products are any products that improve the quality of the soil. Examples include compost, soil conditioners and anaerobic digestate.

Proposal 1: Collecting a standard set of materials

Currently, no single material is collected for kerbside recycling by every local council in New Zealand. The types of materials collected varies considerably. For example, some councils do not collect glass; a handful do not collect paper; and which plastics are collected varies widely. This variability is confusing to the public and contributes to increased contamination.

New Zealanders are confused about what can be recycled

A national survey by Colmar Brunton found that the public could only correctly identify 20 out of 30 items as being recyclable or not.[79] The items that were accepted by most councils around the country, such as milk bottles, were significantly more likely to be correctly identified than materials that were accepted only by some councils.

People risk losing confidence in recycling

The research also found that only 40 per cent of respondents were confident that all the recyclable items they put in the recycling actually get recycled, and 35 per cent believe that most recycling ends up in landfills. This perception is not helped by the reality that some materials accepted in recycling collections are in fact being sent to landfills. Some councils are still accepting plastics 3, 4, 6 and 7 in kerbside recycling even though no end markets have existed for these materials in New Zealand or overseas for over two years.[80] These plastics are most likely landfilled.

Contamination levels are high

The lack of clarity and consistency in materials collected for kerbside recycling means that contamination levels are high. Contamination can occur in several ways:

- A non-recyclable item (eg, nappies) is placed in a recycling bin.
- The condition of the item prevents it being recycled (eg, a half-eaten tub of hummus).
- The condition of the item hinders other items being recycled (eg, shards of broken glass).

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79 Langley E. 2020. *Rethinking Rubbish and Recycling – online survey*. Prepared for the WasteMINZ TAO Forum by Colmar Brunton. Auckland: WasteMINZ

80 Plastics are labelled with one of seven codes to identify the type of plastic they are made of. Some types of plastic are more recyclable than others. Appendix 3 has more information on the codes and types of plastic.

A national audit of household rubbish and recycling bins found 16 per cent of all materials placed in kerbside recycling bins are contaminated.[81] This amounts to 35 kilos per household, or around 70,000 tonnes nationally every year.

Recycling is put in the rubbish bin

'Missed capture' occurs when items that can be recycled are placed in rubbish bins. In New Zealand, 13 per cent of materials placed in kerbside rubbish bins (108,000 tonnes per year) could have been recycled.[82]

Each year 178,000 tonnes of material are being placed in the wrong bins at kerbside. This leads to increasing costs to local government and ratepayers to remove contamination. It also leads to recyclable materials being sent to landfills and a lower quality of material for recycling.

Standard materials should be collected at kerbside

We propose that any company or council that offers a household kerbside recycling collection should collect the same set of materials. Based on current collections, some materials would no longer be collected in certain areas, while materials would be added to collection services elsewhere. This would provide national consistency, reducing confusion for the public. National consistency would enable the government to undertake national education and communication campaigns for recycling. It would also give brands and manufacturers more certainty about which materials are genuinely recyclable.

We have considered a range of options in the interim regulatory impact statement. The options range from continuing with a voluntary approach to using regulations to require waste collection operators to be licensed. More comprehensive waste legislation is being developed, so national licencing could be considered. However, implementation would likely take several years after the revised Act is passed.

How successful has voluntary implementation been?

In 2019, recyclers and councils agreed on a set of standard materials that would be collected in kerbside recycling. Progress has been made in standardising the plastics collected for recycling, but plastics 3, 4, 6 and 7 are still being accepted by 10 councils[83] despite having no end markets. Less progress has been made on standardising other materials such as aluminium foil and aerosol cans. In addition, some councils have decided not to collect some of the standard materials. For example, nine councils stopped collecting plastics 5 despite strong onshore demand and export markets.

Experience from overseas shows that voluntary measures, such as national education campaigns or relying on a code of practice or voluntary agreement, are likely to be only partially effective. For example, in Ireland, the Regional Waste Management Offices negotiated a voluntary

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81 Yates S. 2019. *Rethinking rubbish and recycling*. Prepared for the WasteMINZ TAO Forum by Sunshine Yates Consulting. Auckland: WasteMINZ.

82 Ibid.

83 Based on information gathered about council collections in late 2021.

agreement for a national standardised list that all collectors would follow. However, some stakeholders have not adhered to the standards, which has caused confusion with the public.

Similarly, in Scotland in 2015, the government created a Household Recycling Charter and Code of Practice for household recycling that local government volunteered to adopt. The code of practice aimed to move toward standardised collection systems, as well as a core set of materials and policies. All but two of the councils signed up to the charter but, by 2019, only 25 per cent had services that broadly aligned with the guidance. Scotland is now considering a more regulated approach.

In New Zealand, the Local Government Waste Manifesto[84] and the National Resource Recovery Taskforce[85] have called for a mandatory set of materials to enable nationally consistent messaging. Regardless of whether a voluntary or a regulatory approach is taken, councils will still need to agree on a standard list of materials and a process for updating this list.

Questions

31 Do you agree with the proposal that a standard set of materials should be collected for household recycling at kerbside?

32 Do you agree that councils collecting different material types (in addition to a standard set) might continue to cause public confusion and contamination of recycling?

33 Do you think that national consistency can be achieved through voluntary measures, or is regulation required?

How we are thinking about standardising the materials collected

We have considered a range of criteria to determine the standard set of materials collected for dry recycling.

First, we want to minimise disruption during the transition phase. If most councils are currently collecting a certain material and it largely meets the rest of the criteria below, then it should continue to be collected.

Second, we want to ensure materials have sustainable end markets. Successful recycling requires someone who is willing to buy the recycled material and turn it into another product that people will buy. Currently, certain materials (eg, low-value plastics) are collected even though no end market (onshore or overseas) exists.

Next, materials must have viable processing and sorting technologies. Some materials are not viable to be sorted or processed on a commercial scale. For example, multi-material products (ie, those containing two or more types of materials that cannot easily be separated for recycling.) Plastic pumps and triggers from spray bottles are made from a combination of different plastics that cannot be easily separated. Equally, very small items cannot be

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84 *Local Government Waste Management Manifesto 2020 Update.* Developed by the Territorial Authorities' officers forum, a sector group of WasteMINZ..

85 Hon Sage E. 2019. *Plan to recharge recycling*. Press release. www.beehive.govt.nz/release/plan-recharge-recycling.

separated out at recycling facilities. In other cases, the quantity of material received may make it uneconomic to sort and bale separately.

Finally, materials must be able to be processed by both manual and automated materials recovery facilities. The systems used around the country to process recycling vary according to the size of city or town, the cost of processing, and the importance placed on social and community goals along with environmental and economic outcomes. It is important that materials can be accepted at all facilities in New Zealand to ensure equitable outcomes.

Proposed list of dry recyclables

We propose that the materials in table 3 should be collected in household kerbside recycling schemes nationwide. Appendix 3 gives a more detailed explanation of individual materials.

Table 3: Proposed materials for inclusion in household kerbside collections

Material	Number of councils collecting currently (out of 67)	Sustainable end markets	Viable and cost-effective processing and sorting technologies	Can be processed safely at both manual and automated facilities
Steel and aluminium tins and cans	65	Yes	Yes	Yes
Paper and cardboard	65	Yes, but markets can fluctuate and become uneconomic if quality is low or freight becomes too costly	Yes	Yes
Pizza boxes	61 councils accept in recycling 2 councils accept in organics bin only	Yes	Yes	Yes
Plastic bottles 1 PET	65	Yes	Yes	Yes
Plastic bottles 2 HDPE	65	Yes	Yes	Yes
Plastic containers and trays 1 PET	58	Yes	Yes, once PVC trays are banned in 2022	Yes
Plastic containers and trays 2 HDPE	65	Yes	Yes	Yes
Plastic containers and trays 5 PP	47	Yes	Yes, though facilities processing low quantities may face extra costs until regulated product stewardship for plastic packaging is introduced	Yes
Glass bottles and jars	62	Partial, bottle-to-bottle recycling capacity in New Zealand is limited	Yes	Yes

We propose that the products listed in table 4 below are excluded from kerbside recycling initially. Contamination is mainly caused by the wrong material being placed in the wrong bin. However, contamination can also be caused by how an item is presented for recycling, and the size of an item can also affect its ability to be recycled.

Appendix 3 gives a more detailed explanation of individual materials and presentation conditions.

Table 4: Proposed materials for exclusion from household kerbside collections

Material	Number of councils currently collecting (out of 67)	Sustainable end markets if collected through kerbside currently	Sustainable end markets if collected through other means	Viable and cost-effective processing and sorting technologies	Can be processed safely at both manual and automatic facilities
Expanded polystyrene	2	No	Yes, but limited	No	No
Soft plastics and shopping bags	3	No	Yes, but limited	No	No
Liquid paperboard	3	No	No, but a new factory is being set up which will take some but not all of these materials	No	No
Plastic 7 (All other plastics)	6	No	Possibly but limited	No	No
Plastic 6 (PS)	7	No, being phased out for food and drink	Possibly but limited	No	No
Plastic 4 (LDPE rigid)	9	No	Possibly but limited	No	No
Plastic 3 (PVC)	10	No, being phased out for food and drink	Possibly but limited	No	No
Aluminium foil	13	Partial – if clean and able to be collected separately from cans, otherwise contamination reduces the value of can bales	Yes	No	No
Aluminium trays	22	Partial – if clean and able to be collected separately from cans, otherwise contamination reduces the value of can bales	Yes	Partial – see Appendix 3 for more detail	No
Aerosols	42/67	Partial – kitchen and bathroom aerosols only and if able to be collected separately from cans, otherwise treated as contamination	Yes	Partial – see Appendix 3for more detail	No – fire risks where there is no puncturing equipment
Small items < 50 mm		No, too small to be recycled so are landfilled	Yes	No, too small	No

Material	Number of councils currently collecting (out of 67)	Sustainable end markets if collected through kerbside currently	Sustainable end markets if collected through other means	Viable and cost-effective processing and sorting technologies	Can be processed safely at both manual and automatic facilities
Lids	19/67	Partially, depends on material; see Appendix 2 for more detail	Yes	Partially, only for some types of lids	Partially, only for some types of lids

Note that if a CRS is introduced and it accepts beverage container lids for recycling (as recommended), this would have implications for whether lids are recycled at kerbside. See Appendix 2 for detailed information on metal and plastic lids.

Questions

34 Please tick below all the items from the proposed list which you agree should be included in the standard set of materials that can be recycled in household kerbside collections.

- glass bottles and jars
- paper and cardboard
- pizza boxes
- steel and aluminium tins and cans
- plastic bottles 1 (PET) and 2 (HDPE)
- plastic containers and trays 1 (PET) and 2 (HDPE)
- plastic containers 5 (PP)

35 If you think any of the materials above should be excluded, please explain which ones and why.

36 If you think any additional materials should be included, please explain which ones and why.

Process for adding materials to this list

The list of materials that are collected at kerbside needs to be adaptable. Companies may improve the recyclability of their packaging, new markets may become accessible, and new sorting technologies may be developed.

Three criteria for materials could mostly remain the same:

- New Zealand has access to sustainable end markets for the material.
- The material has viable processing and sorting methods and technologies.
- The material can be processed by both automated and manual materials recovery facilities.

In the future, manufacturers and supply chains may become more interested in collecting materials at kerbside. We therefore suggest replacing the criterion of minimising disruption in the transition with a requirement that supply chains contribute appropriately to recovery and sustainable end-of-life solutions for their products. Product stewardship may provide a framework for companies to contribute to the costs of recycling their products at end-of-life.

There would need to be an open and transparent process for accepting new materials based on sound evidence and data. Several options could be considered:

- Ministry for the Environment staff review an application then consult with a stakeholder reference group and make a recommendation.
- The Waste Advisory Board could be strengthened and act as a decision-making body.
- An independent board could be established for this purpose.

We do not envisage that individual products would be accepted over time on a case-by-case basis. Instead, classes of materials may be considered. Given the desirability for supply chains to contribute to recovery, it might make sense that some kind of product stewardship scheme could be required for any class of materials not currently covered by these proposals.

Materials could be assessed for acceptance every two to three years unless they are part of a priority product stewardship, in which case they could be assessed on application.

Alternatives to kerbside recycling

Just because an item is not accepted for recycling at kerbside (due to its size or other characteristics), this does not mean it cannot be recycled.

In addition to kerbside collections, councils also operate recycling and transfer stations as drop-off locations. In the future, councils, NGOs and communities may want to develop or increase the availability of such resource recovery parks and drop-off schemes.

As discussed in Part 1 of this document, other high-traffic areas, such as retail stores and shopping centres, could also act as collection points for some items (eg, beverage containers). New Zealand already has schemes for materials (eg, soft plastic and expanded polystyrene recycling), take-back schemes for products (eg, coffee pods and toothpaste tubes), and community recycling initiatives for items like metal rip tabs and bread tags. The container return scheme proposes to use a mixed model of return to retail, and recycling depot drop off.

Questions

37 Do you agree that the standard set of materials should be regularly reviewed and, provided certain conditions are met, new materials added?

38 What should be considered when determining whether a class of materials should be accepted at kerbside in the future? (Tick all that apply)

- sustainable end markets
- end markets solutions are circular and minimise environmental harm
- viable processing technologies
- processing by both automated and manual material recovery facilities
- no adverse effects on local authorities, including financial
- supply chains contribute appropriately to recovery and end-of-life solutions for their products
- other (please specify).

39 Who should decide how new materials are added to the list?

- the responsible Minister
- Ministry for the Environment staff in consultation with a reference stakeholder group
- existing Waste Advisory Board
- an independent board
- other (please specify).

40 Do you agree that, in addition to these kerbside policies, New Zealand should have a network of convenient and easy places where people can recycle items that cannot easily be recycled kerbside? For example, some items are too large or too small to be collected in kerbside recycling.

Proposal 2: All urban populations should have kerbside food scraps collection

We are wasting valuable resources

Composted food scraps and garden waste can be turned into a variety of products that improve soil quality, displace artificial fertiliser and improve water retention. Food scraps can also be sent to an anaerobic digestion facility, where they are used to generate energy and produce a fertiliser called digestate.[86]

Food waste makes up 9 per cent of waste sent to class 1 landfills and 22 per cent of emissions generated by landfills.[87] Emissions from food waste in landfills can be produced for up to 50 years, even after a landfill is closed. While some of these emissions can be captured and turned into power, some gases still escape into the atmosphere. It is therefore important that we start removing food waste from landfills as quickly as possible.

Councils will probably continue to roll out kerbside food waste collections, but it is unlikely that every council will choose to do so. On our current trajectory, New Zealand won't achieve the proposed 2030 targets in the New Zealand Waste Strategy or the proposed 40 per cent reduction in biogenic methane in the emissions reduction plan.[88]

New infrastructure is needed

Some councils currently have composting facilities and anaerobic digestion facilities, while in other parts of the country new facilities will need to be introduced. We estimate that at least nine new large and four new small facilities will be required around the country to process food scraps.

Regional collaboration is therefore key to building these facilities in a cost-effective manner, and the private sector will also need confidence to invest.

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86 Anaerobic digestion facilities cannot accept garden waste. Compost and digestate are complementary products that improve the productivity of soils in different ways. They can be used separately or together.

87 Wilson D, Eve L, Ballinger A. 2020. *Improvements to estimates of greenhouse gas emissions from landfills*. Prepared for the Ministry for the Environment by Eunomia Consulting. Wellington: Ministry for the Environment.

88 If proposed targets in the waste strategy and emissions reduction plan are adopted. The Government consulted on the proposed waste strategy and the emissions reduction plan in late 2021, and the Government is now considering feedback from these consultations with final policy decisions expected during 2022.

Urban food scraps collection

We are proposing that households receive a food scraps collection at kerbside for urban areas, defined as a town with a population of 1000 or more residents, and in areas where there are already existing kerbside collections.

We considered other options. These are presented in the interim regulatory impact statement. For example, a ban on sending food waste or organic matter to landfills may eventually be required, as suggested in the consultation on the emissions reduction plan. However, a ban would require further work and significant additional infrastructure, so this option is not feasible in the short-term. By making kerbside food scraps collection available in the first instance, the necessary infrastructure for country-wide organic collections can be built, and while determining whether a ban is also needed.

Questions

41 Do you agree that food and garden waste should be diverted from landfills?

42 Do you agree that all councils should offer a weekly kerbside food scraps collection to divert as many food scraps as possible from landfills?

43 Do you agree that these collections should be mandatory in urban areas (defined as towns with a population of 1000 plus) and in any smaller settlements where there are existing kerbside collections?

Types of food scraps collection

Our proposals focus on collection of food scraps at a minimum, but the intent is to allow councils to also collect garden waste if this is the best option for their ratepayers and/or region.

Research has shown that the diversion of food and garden waste from landfills is maximised when food scraps are collected separately from garden waste.[89] Whether food and garden waste is collected separately or together also determines how it can be processed – either through anaerobic digestion or through commercial or community composting facilities. Further details on the merits of the different collection types are provided in the interim regulatory impact statement.

Case study – Opt-in green waste kerbside collection

Tauranga City Council rolled out a new food scraps kerbside collection in July 2021. At the same time, it offered an opt-in green waste collection service for an additional fee. To date 19 per cent of households have taken up the additional green waste opt-in service.

89 Mills C, Andrews J. 2009. *Household food waste collection guide*. WRAP. Banbury, UK

How do we tackle green waste?

Green waste in landfills also creates emissions. If councils implement food scraps only collections, we want to understand how additional diversion of garden waste from landfills can be encouraged. Councils could offer an additional green waste bin, or they could offer subsidised drop-offs at transfer stations. We also want to understand what else councils could do to reduce or divert green waste from landfills.

Question

44 Do you think councils should play a role in increasing the diversion of household garden waste from landfills? If so, what are the most effective ways for councils to divert garden waste?

- offering a subsidised user-pays green-waste bin?
- making it more affordable for people to drop-off green waste at transfer stations?
- promoting low-waste gardens (eg, promoting evergreen trees over deciduous)?
- other (please specify).

Implementation

With the waste levy increasing to $60 per tonne by 1 July 2024 (for class 1 landfills), additional levy funding will be available for councils to support the implementation of food scraps collections and for investment in regional processing facilities. However, it will take some years for significant increases in levy funding to become available. Councils may also have other priorities for spending levy funds.

We propose to work with councils to phase in the adoption of food scraps collections before 2030. To make this practical, we could at a minimum, work towards the rollout of kerbside food scraps collections by 2025 for councils with access to existing commercial facilities with the ability and resource consent to take food scraps.

For example, we could target urban centres within 150 kilometres of an existing composting plant. In addition, we could work with councils where new infrastructure is required to start new collections before 2030. We note that some regions might be ready and willing to implement collections and processing facilities sooner, and that other drivers, such as emissions reductions objectives, may necessitate faster action for central and local government.

Appendix 4 lists the composting facilities that we know have existing resource consent and capacity to accept food scraps from kerbside collections. We want to know if there are other facilities that can accept food scraps.

A phased approach can give councils and the private sector time to determine the types of processing infrastructure they need. Time will also encourage greater regional collaboration and economies of scale in building new facilities.

Questions

45 We propose a phased approach to the rollout of kerbside food scraps collections. The timeframes will depend on whether new processing facilities are needed. Do you agree with a phased approach?

46 Do you agree that councils with access to suitable existing infrastructure should have until 2025 to deliver food scraps collections?

- yes, that's enough time
- no, that's not enough time
- no, it should be sooner.

47 Do you agree that councils without existing infrastructure should have until 2030 to deliver food scraps collections?

- yes, that's enough time
- no, that's not enough time
- no, it should be sooner.

48 Are there any facilities, in addition to those listed below, that have current capacity and resource consent to take household food scraps?

- Envirofert – Tuakau
- Hampton Downs – Waikato
- Mynoke Vermicomposting site – Taupō
- Enviro NZ – new facility planned for the Bay of Plenty in 2023
- Living Earth – Christchurch
- Timaru Eco Compost Facility – Timaru.

Because of the high number of new processing facilities required and the likely ambition of emissions reductions targets, it is timely to also consider whether businesses should be required to separate food waste for recycling. This is discussed in Part 3 of this document.

What food and/or garden waste should be collected?

Existing council provided food scraps and food and garden waste collections are inconsistent in what they accept and how this information is communicated. Having a consistent list of what is accepted will make it easier for councils to rollout new collections, to share resources and messaging, and to improve the quality and consistency of compost and other soil-amendment products.

We need to protect our soils

New Zealand has a large primary sector that grows much of our food, and exports food overseas. Protecting the quality and health of our soils and human health is therefore vital. Materials placed in organic collection bins are turned into compost or digestate and then spread onto soil to grow food. We need to be mindful of end uses when we think about which non-food or non-garden waste items should be collected in organic collections bins.

To protect our soils, we need to consider two main types of non-food items:

- recyclable paper and cardboard (eg, egg cartons, shredded paper)
- 'compostable' packaging that is made from plastic, fibre or both.

Deciding what to collect

In deciding which materials should be accepted in food and garden waste bins, we are considering these criteria:

- These products help divert food waste from landfills.
- They do not contain additives, inks or chemicals that could be toxic to soil or human health, or that do not biodegrade (ie, they are certified in their final form to an accepted international standard).[90]
- They do not increase the risk of contamination from conventional plastic entering the soil (ie, they use nationally consistent labelling so they can be recognised as either compostable or recyclable).
- They can be separated from non-compostable items using existing sorting technology.
- They can be processed effectively in a composting facility within the required timeframe.
- They can be processed without adversely impacting local authorities and processors, including financially.

[90] Note New Zealand does not have a standard.

Table 5: Materials to be excluded from kerbside food scraps and garden waste bins

Material type	Description	Assists in diverting food waste from landfills	Does not contain additives, inks or materials that could be toxic to soil or human health	Low risk of contamination from conventional plastic entering the soil	Can be processed effectively	Materials can be accepted without adverse impacts, including financially
Conventional paper and cardboard	Kitchen paper towels / hand towels / serviettes Newspaper Food-soiled cardboard containers (eg, pizza boxes) Shredded paper and cardboard	Partially – they do not help divert food waste, but they are often food-soiled, which prevents them being recycled	Not necessarily	Yes	Yes, though may slow down processing for some facilities	Yes
Compostable products and packaging	Compostable plastic products and packaging	Not necessarily, some products and packaging do but others do not	Only if certified compostable in their final form	No	No in most cases	No, not permitted in organically certified compost
	Compostable fibre products and packaging	Yes, often used in takeaway packaging	Not necessarily, may include chemicals such as PFAS	Yes	Yes	Partially, may not be permitted in organically certified compost
	Compostable bin liners	Yes	Yes	No	Yes, but may not be permitted in facilities making organically certified compost	Partially, not permitted in organically certified compost
Tea bags	These can be sealed with conventional plastic 5 PP or compostable plastic PLA	Yes	Yes, provided they are not sealed with conventional plastics	Yes, provided they are not sealed with conventional plastics	Yes	Yes, provided they are not sealed with conventional plastics

Proposed materials

We propose that only food scraps and garden waste are collected in kerbside bins. Best practice guidance would be useful in terms of how to communicate effectively to the public which food and garden waste items can be accepted. The guidance could also cover miscellaneous and problematic items (eg, vacuum cleaner dust, human hair, and animal fur and droppings).

Additional research may also be useful to understand how fibrous plants that cannot be easily processed for composting (eg, flax or large tree stumps), can be diverted from landfills.

Several issues need to be resolved before non-food products and packaging can be accepted in food scraps and garden waste bins. These concerns apply equally to home compostable packaging when composted at home. Concerns include uncertainty around the additives and inks used, the lack of certification, and the difficulties of distinguishing compostable from non-compostable items. These issues are discussed in more detail in Appendix 3 and in the Ministry's position paper on compostable packaging.

We propose that non-food items, non-garden waste products, and all packaging is excluded from kerbside food and garden waste bins at this stage. We would like feedback on whether compostable bin liners should be allowed, noting that only a quarter of councils that have implemented food scraps collections currently allow bin liners to be included. However, bin liners and bench-top caddies have been shown to increase participation in kerbside collections.[91]

We also want to hear any plans from tea manufacturers to voluntarily phase out non-compostable plastics in tea bags, before determining whether tea bags should be accepted.

Alternative collection options for compostable packaging

Compostable plastic packaging is included under priority product stewardship for plastic packaging. However, compostable fibre (cardboard and paper) packaging is not.

We propose that compostable packaging should not be disposed of in food scraps collections. Product stewardship schemes for compostable packaging will need to consider how these materials can be collected. This could involve setting up drop-off points (as the soft plastic recycling scheme has done), or a separate kerbside bin for compostable packaging only. Both these options may make it easier to identify and separate compostable from non-compostable packaging.

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[91] Zero Waste SA. 2010. *Valuing our food waste: South Australia's household food waste recycling pilot*. Adelaide: Zero Waste SA.

Determining suitability for kerbside collection

As with the standard set of materials for dry recycling at kerbside, we propose a similar process and criteria for determining whether products that we currently propose to exclude could be included in the future.

Questions

We propose to exclude the following non-food products and any packaging from any kerbside collection bins used to divert food scraps and/or green waste from landfills:

- kitchen paper towels / hand towels / serviettes
- newspaper and shredded paper
- food-soiled cardboard containers (eg, pizza boxes)
- cardboard and egg cartons
- compostable plastic products and packaging
- compostable fibre products and packaging
- compostable bin liners
- tea bags

49 Are there any additional materials that should be excluded from kerbside food and garden bins? Please explain which ones and why.

50 For non-food products or packaging to be accepted in a food scraps bin or a food and garden waste bin, what should be taken into consideration? Tick all that apply.

- products help divert food waste from landfills.
- products meet New Zealand standards for compostability.
- products are certified in their final form to ensure they do not pose a risk to soil or human health.
- products are clearly labelled so that they can be distinguished from non-compostable products.
- a technology or process is available to easily identify and sort compostable from non-compostable products.
- producers and users of the products and packaging contribute to the cost of collecting and processing.

51 If you think any of the materials listed above should be included in kerbside food and garden bins, please explain which ones and why.

Making the core proposals work

The following proposals are designed to make the kerbside system durable over time and improve our recycling performance. The proposals focus on collecting information, setting targets (or performance standards), and considering greater source separation of glass and cardboard.

Proposal 3: Reporting on household kerbside collections offered by the private sector

How well are households recycling?

Most councils do not know how well households in their regions are recycling. In many districts, the private sector also provides collections for dry recyclables (13 districts) and/or rubbish services (48 districts). Collections by private providers are sometimes provided instead of council services, and other times as a supplement to them.

The Government is implementing improved data reporting that will require councils to report to the Ministry for the Environment on the waste and recycling services they provide, including kerbside collections. These reporting requirements are expected to be in place before 2023.[92]

However, many private providers of household kerbside collections do not share their data with councils. This means councils do not know how well households are recycling and whether efforts to encourage people to reduce their waste are effective. It also makes it difficult for local and central government to plan future services and activities.

We propose reporting to central government

We propose that private companies report annually, and directly to central government, on the performance of their private household kerbside collections. The Ministry for the Environment would then combine this data with additional information from councils on their kerbside collections. The overall performance for each region, combining council and private collections, would then be published online.

It would then be transparent as to how well collections are performing and help identify regions that are performing well and regions where more support is needed. Publicly accessible regional statistics are standard practice in other jurisdictions, such as Wales.

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92 Cabinet paper: Additional proposals to improve the availability of waste data (2021). https://environment.govt.nz/assets/publications/improving-the-availability-of-waste-data-cabinet-paper.pdf

We considered other options presented in the interim regulatory impact statement. Councils already ask private providers to voluntarily report on their collections, with little success. We considered requiring councils to supply this information to central government, which would require councils to pass bylaws to obtain the information from private providers. However, this approach would be unnecessarily burdensome for councils and for waste companies, which may offer services in multiple regions. Instead, we are requiring private companies to report directly to the Ministry for the Environment.

Implementation

We propose that the private sector reports annually on the following standard indicators (in tonnes) for household kerbside collections:

- disposal rate (measures rubbish)
- recovery rate (measures dry recycling eg, paper, glass and plastic)
- resource recovery by material stream:
  - glass
  - paper and cardboard
  - plastic
  - metal
- recycling contamination rate (measures materials placed in recycling bins that cannot be recycled)
- food scraps recovery rate (for food scraps only collections)
- food scraps and garden waste recovery rate (for comingled food and garden waste collections)
- garden waste recovery rate (for garden waste only collections)
- food scraps and garden waste contamination rate (measures items placed in food and garden bins that cannot be processed).[93]

We are seeking more feedback on how easy it would be to also provide a breakdown of the ratio of food to garden waste, where combined food and garden waste collections are offered.

[93] Some companies may need to report on contamination rates for both food scraps and garden waste collections if they offer both services.

Where will this information be published?

We propose that summarised data will be published online in the form of total diversion rates and percentage of contamination for each region, as these measurements indicate quantity and quality respectively. We are seeking feedback on whether any additional information should be published online and why.

Diversion would be calculated by weight in tonnes using this formula:

$$\frac{\text{(Total recycling – contamination) + (Total food scraps or food and garden scraps – contamination)}}{\text{Total materials placed at kerbside}}$$

Contamination would be reported as a percentage of recycling

We propose that reporting will start from mid-2024 to give the private sector time to organise reporting.

Questions

52 Do you agree that it is important to understand how well kerbside collections are working?

53 Do you agree with the proposal that the private sector should also report on their household kerbside collections so that the overall performance of kerbside services in the region can be understood?

54 Do you agree that the information should be published online for transparency?

55 Apart from diversion and contamination rates, should any other information be published online?

Proposal 4: Setting targets/ performance standards for councils

New Zealand's waste collection system needs goals that will drive us towards the overall targets proposed in the New Zealand Waste Strategy.

A minimum performance standard

We propose a minimum performance standard of 50 per cent for diversion (ie, the percentage of dry recyclables and food scraps collected for recycling from household kerbside collections).

An overseas performance analysis revealed that a performance standard of 50 per cent diversion is still very ambitious.[94] Standardising the list of materials accepted (Proposal 1) and making food scraps collections available to households (Proposal 2) will help councils achieve this minimum target.

A high-performance target

We also propose a high-performance target of 70 per cent diversion to incentivise councils that are already performing well to reach and exceed international best practice. The difference between a minimum standard and a target is that not reaching a minimum performance standard over time will have consequences, whereas progress towards the high-performance target would only be monitored.

This said, higher performing councils are more likely to get into a 'virtuous cycle', in which increased recycling enhances households' confidence in the system, lowers costs for councils and recyclers, and increases the confidence of private sector investors.

How does this fit with the proposed targets in the waste strategy?

The New Zealand Waste Strategy has a proposed target for households to reduce their waste disposal by 60–70 per cent by 2030. This includes waste disposed of at kerbside, as well as waste disposed of at transfer stations. You can think of the target for household kerbside recycling as a subset of the more comprehensive target in the waste strategy.

94 Eunomia and European Environmental Bureau. 2019. *Recycling – who really leads the world?*

Case study – What is achievable?

Waitomo District Council is one of the few councils that has complete information on their waste. They own their landfill, and the district has only one company collecting waste and recycling under contract to the council.

They have user-pays rubbish bags, and each household has one crate for kerbside recycling. Paper and cardboard are collected separately.

Waitomo currently diverts 46 per cent of materials from landfills at kerbside. If they implemented a food scraps and garden waste collection, they could divert up to 67 per cent. If they started collecting plastics 5 and, if residents were motivated and educated to recycle as much as possible, they could reach over 70 per cent diversion.

With a soft plastic recycling drop-off at the local supermarket, and if manufacturers moved away from unrecyclable plastics, the district could even reach over 85 per cent diversion.

Timeframe for achieving the minimum standard

We propose that councils have until 2030 to achieve the minimum performance standard. This aligns with the timeframes proposed in the New Zealand Waste Strategy and emissions reduction plan. It also recognises that regions where new processing facilities for food waste need to be set up will require a longer lead-in time.

Consequences of not meeting minimum standard

We are interested in feedback on the range of consequences that could be considered for councils who fail to meet minimum performance standards. In Wales, for example, a financial penalty can be imposed on councils who do not meet the required performance standards.[95]

The Government can establish performance standards under the current Waste Minimisation Act; however, tools for consequences are limited and the Minister can only choose to withhold levy payments. As more comprehensive waste legislation is developed, it could include a more appropriate range of consequences.

[95] Auditor General for Wales. 2018. *Waste management in Wales: Municipal recycling*. Prepared for the National Assembly.

Questions

56 Should kerbside recycling services have to achieve a minimum performance standard (eg, collect at least a specified percentage of recyclable materials in the household waste stream)?

57 Should the minimum performance standard be set at 50 per cent for the diversion of dry recyclables and food scraps?

58 We propose that territorial authorities have until 2030 to achieve the minimum performance standard, at which time the rate will be reviewed. Do you agree?

59 In addition to minimum standards, should a high-performance target be set for overall collection performance to encourage territorial authorities to achieve international best practice?

60 Some overseas jurisdictions aim for diversion rates of 70 per cent. Should New Zealand aspire to achieve a 70 per cent target?

61 What should the consequences be for territorial authorities that do not meet minimum performance standards?

Proposal 5: Separate collection of glass and paper/cardboard

Previous stakeholder engagement has strongly recommended that types of recyclables are separated at the point of collection to improve quality.[96] We are particularly interested in whether glass and paper/cardboard should be collected separately because of the impact of broken glass on cardboard.

Most materials can only be recycled on their own. Materials can be collected separately, or they can be collected together and separated at a recycling facility. Some recycling facilities use machines, magnetics and optical sensors to sort materials. Other facilities manually sort some or all of the recycling. When materials cannot be easily separated or sorted, they cannot be recycled, or the quality of the recycling may be lower.

Separating glass improves recycling quality

When glass breaks, the shards and broken pieces of glass can be difficult to separate from other recyclables. This is particularly a problem for paper and cardboard, as it can be expensive and, in some cases, impossible to remove the shards.

New Zealand's pulp mills are not equipped to remove glass fines from paper and cardboard. Any paper and cardboard that is collected along with glass is exported for recycling, because it requires extra processing to remove contamination. In addition, because glass contamination lowers the quality of paper and cardboard, recent price fluctuations for low-value paper and cardboard exports have affected the viability of exporting these products.[97]

COVID-19 is also having an ongoing impact on recycling, increasing the cost of shipping materials overseas. About half of New Zealand's paper and cardboard collected for recycling is exported.

Glass shards also impact other recyclable materials. Collecting glass separately from other materials therefore improves the quality of recycling. The quality of paper and cardboard recycling can be greatly improved, and other materials such as plastic and metal also benefit.

The choice of collection bin impacts the quality of recycling

Glass collected with other dry recyclables in a comingled wheeled bin is more likely to be broken during collection and the fine shards of glass contaminate other recyclables particularly paper/cardboard. Overseas experience shows that when glass is collected separately, compaction rates for trucks collecting the other dry recyclables can be increased, increasing

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96 Pritchett S, Yates S. 2020. *Recommendations for standardisation of kerbside collections in Aotearoa*. Prepared for the Ministry for the Environment by WasteMINZ. Wellington: Ministry for the Environment.

97 Wilson D, et al. 2018. *National Resource Recovery Project – Situational Analysis Report*. Prepared for the Ministry for the Environment by Eunomia. Wellington: Ministry for the Environment.

capacity in the trucks.[98] Cardboard, in particular, benefits from greater compaction, creating more space in the recycling truck. Increasing compaction reduces the number of trips required and so reduces transport emissions.

Currently, 39 councils in New Zealand collect glass separately at kerbside, and a further nine collect glass in a comingled crate but hand-sort it at kerbside. Glass can be collected in a crate or wheeled bin. Councils can also choose whether to colour-sort glass or not.

Alternatively, cardboard and paper could be collected separately in a wheeled bin, crate, bag or a box. Four councils currently collect paper/cardboard separately at kerbside.

The challenges with collecting paper/cardboard separately in a crate are keeping it dry and preventing it from blowing away in the wind.

Wheeled bins are often emptied by a machine, whereas crates and boxes are usually emptied by people. The Government funded an independent health and safety review to determine whether kerbside systems that require greater manual handling, such as collecting materials separately in crates and boxes, could be undertaken safely.[99] The review found that, provided standard industry safeguards are in place, any risks associated with manual handling at kerbside can be adequately managed.

Options we are considering

With most of the proposals in this document, we have laid out a preferred option. On this issue, we have not specified a preferred option. Instead, we have considered the following three options (besides the status quo) to reduce the impact of glass fines and shards on the quality of recycling.

1. *Issuing best practice guidance and funding.* The Government could issue guidance to councils on whether to separate glass and paper/cardboard and provide funding for new collection containers.
2. *Mandatory separation.* Councils could be required to separate paper/cardboard or glass from other recyclables, but each council could choose which material to separate.
3. *Glass collected separately.* Councils could be required to collect glass separately from other recycling.

Issuing guidance (option one) could motivate more councils to improve the quality of their recycling. Combined with reporting requirements and setting a target for performance, this could motivate councils and collectors to move towards better separation of household recyclables.

Collecting glass separately (option three) would completely remove any contamination from glass and widen the range of uses for glass. Councils could choose to colour-sort glass, which would enable it to be turned back into bottles rather than crushed and used for roading.

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98 Pritchett S, Yates S. 2020. *Recommendations for standardisation of kerbside collections in Aotearoa*. Prepared for the Ministry for the Environment by WasteMINZ. Wellington: Ministry for the Environment.

99 Dearsly G. 2022. *Standardisation of kerbside collections: Health and safety review*. Prepared for the Ministry for the Environment by First 4 Safety. Wellington: Ministry for the Environment.

A more detailed analysis of the markets for glass and the impact of collecting glass separately can be found in the interim regulatory impact statement. The downside of option three is that it reduces the flexibility for councils and collection companies.

The impact of a NZ CRS on glass collections

The proposed Container Return Scheme (NZ CRS) will collect glass for recycling, and it is likely to divert a substantial amount of beverage glass from kerbside collections. Overseas experience suggests that 10 to 20 per cent of beverage containers are likely to be left in kerbside collections. In addition, glass jars and other non-beverage glass bottles (eg, olive oil) will still be collected at kerbside. The average household is estimated to use 70 glass jars and non-beverage glass bottles each year.[100]

The reduced glass volume at kerbside resulting from a New Zealand CRS would likely mean the frequency of glass collections would decrease. This could provide significant savings to councils and ratepayers.

The value of the deposit and ease of accessing the return-point locations will determine how well a NZ CRS is used. It may make sense, therefore, to wait until the design of the NZ CRS scheme is finalised before making a decision on how the remaining glass is collected kerbside.

Questions

62 Should either glass or paper/cardboard be collected separately at kerbside in order to improve the quality of these materials and increase the amount recycled?

- glass separate
- paper/cardboard separate
- separated, but councils choose which one to separate
- status quo – they remain comingled for some councils.

63 If glass or paper/cardboard is to be collected separately, should implementation:

- begin immediately
- wait for any CRS scheme design to be finalised
- wait until the impact of a CRS scheme has been observed.

[100] Yates S. 2019. *Rethinking rubbish and recycling*. Prepared for the WasteMINZ TAO Forum by Sunshine Yates Consulting. Auckland: WasteMINZ.

Proposal 6: All urban populations should have access to kerbside dry recycling

Kerbside recycling is the main way households recycle

Kerbside collections are the main way that households recycle their waste and dispose of their rubbish. Kerbside rubbish collections reduce the risk of illegal dumping or burning of rubbish, and kerbside recycling collections make it more convenient for households to recycle.

However, not every council provides kerbside recycling collections. Where kerbside services are not offered, households must take items to transfer stations or rural recycling stations.

Of the 67 local councils in New Zealand, 59 provide or fund recycling collections. Six councils do not fund kerbside recycling collections, and households pay a private service provider to arrange a collection. Two councils have no, or extremely limited, kerbside recycling collections and no private providers.

Household recycling rates for councils without council-funded kerbside collections are low or unknown. Based on publicly available information, diversion rates range from 16 to 28 per cent for councils where only private collections are available (table 6), compared to an average national diversion rate of 35 per cent.

Table 6: Diversion rates for councils with only private collection services

Council	Diversion
Council 1	28%
Council 2	17%
Council 3	16%
Council 4 and Council 5	21% combined regional total with other territorial authorities. The performance of the individual councils is not known.
Council 6	17%
Council 7	Not known – no information published
Council 8	Not known – no information published

In larger urban centres without council-funded services, kerbside recycling services would significantly increase participation rates in recycling and the total amount recycled. On the other hand, some councils that choose not to fund kerbside recycling services have made investments in rural recycling stations, where residents from smaller communities can drop off materials.

We propose that at a minimum all urban centres with a population of 1,000+ should have access to council-funded kerbside recycling services. This would give an additional 200,000

people access to recycling in areas where services are currently private or not provided at all (table 7).

Implementation

We propose that kerbside collections for dry recycling should be implemented within two years of a council's next Waste Management and Minimisation Plan, or by 2026, whichever is sooner.[101] Councils would still have the choice to offer rubbish collections or not.

Dependent on final decisions on how the government manages the waste levy under the revised Waste Minimisation Act, it would seem appropriate for councils to be offered guidance, support and (where appropriate) funding to implement and improve kerbside recycling services.

Table 7: Districts without council-funded kerbside recycling collections and towns with populations >1,000

Council	Towns with populations 1,000+
Far North District	• Ahipara • Cable Bay • Haruru • Kaikohe • Kaitaia • Kerikeri • Moerewa • Opua • Paihia
Kaipara	• Dargaville • Kaiwaka • Mangawhai Heads • Mangawhai • Maungaturoto
Rangitīkei	• Bulls • Marton • Taihape
Whanganui	• Whanganui
Kāpiti	• Ōtaki • Ōtaki Beach • Paekākāriki • Paraparaumu • Waikanae
Upper Hutt	• Upper Hutt
Waitaki	• Oamaru • Palmerston

[101] Next review of WMMP 2023: Far North District Council, Kaipara District Council, Kāpiti District Council, Upper Hutt City Council; 2024: Rangitīkei, Waitaki; 2027: Whanganui.

Council	Towns with populations 1,000+
Chatham Islands	• None

Questions

64 Should all councils offer household kerbside recycling services?

65 Should these services be offered at a minimum to all population centres of more than 1000 people?

66 Do you agree that councils without any council-funded kerbside recycling collections should implement these collections within two years of their next Waste Management and Minimisation Plan?

Implementation support for proposals 1–6

For these proposals to be successful, individuals ultimately must choose to recycle and take the time and effort to recycle correctly. At the same time, we have a collective responsibility to enable everyone to do so. This will require local government, industry and the community sector to work with central government. It will also require more than just central government action to succeed, but ongoing work to change attitudes and behaviours. Research, funding, technical support and behaviour change will be needed in addition to regulation.

Research

To date local and central government have jointly funded research into:

- household food waste – the amount and type of food wasted; people's willingness and ability to waste less food and adopt solutions
- recycling audits – the amount of contamination in recycling, the main materials causing contamination and missed capture
- attitudes to recycling – understanding people's knowledge of what can and cannot be recycled and recycling practices
- recycling engagement – how to engage and motivate those reluctant to recycle
- home composting and compostable packaging – how many people compost at home; their attitudes and experiences of home compostable packaging.

Research into attitudes to waste and recycling so far has provided a solid foundation for programmes to reduce household waste and to divert it from landfill.

Additional research that may be useful includes:

- participation in kerbside food scraps collections – which households choose not to participate and why
- engagement in kerbside food scraps collections – are these collections fully used and, if not, what kinds of foods remain in kerbside rubbish bins and why
- the factors that distinguish high-performing kerbside collections from lower performing schemes.

We would like to know if any other types of research may be required to move to best practice collections.

Funding

By 2024, the waste levy will have increased to $60 per tonne for class 1 landfills. Councils receive 50 per cent of the levy revenue. Under current legislation, this increase will provide up to an estimated $1 billion by 2030 for councils to reduce waste and increase recycling. However, as efforts to divert waste from landfill pay off, the amount of waste levy will also decrease over time.

We are conscious that smaller councils, those in rural locations and those with high visitor numbers relative to ratepayers may need more support. Exactly how that 50 per cent of funding should be distributed between councils is being considered as part of the revision of the Waste Minimisation Act.

We have recently established the Plastics Innovation Fund to support innovative solutions to manage hard-to-recycle plastics,[102] which we are proposing will no longer be collected in kerbside recycling. We have also funded Plastics New Zealand through the Waste Minimisation Fund to provide technical support and assistance to manufacturers to adopt more recyclable packaging.[103]

We are developing a long-term infrastructure plan to guide and stimulate activity and investment by companies, local government, iwi/Māori, and communities. The portion of the levy that will be available via the Waste Minimisation Fund will also increase and could be directed towards related investment or support, subject to final priorities, funds available to councils, and Ministerial decisions.

This programme of work will also provide new business opportunities for private sector and iwi/Māori investment.

Technical support

Smaller councils may only have one staff member who looks after waste and waste minimisation. In rural regions, this person may also be responsible for other areas, such as roading and wastewater infrastructure. Councils like these may need more technical support to implement best practice collections.

We are keen to understand what additional technical support councils could find useful. Support could include all, or some, of the following:

- case studies of best practice
- procurement and contract templates
- operational policy guidance
- business-case development
- additional professional development (eg, understanding the technologies for processing food scraps).

Behaviour change

Many New Zealanders do not know what can and cannot be recycled, and some people have lost confidence that materials are even being recycled.[104] Shifting this will require more than letterbox flyers announcing a new collection; it will need substantive, ongoing behaviour change.

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[102] Plastics Innovation Fund https://environment.govt.nz/what-you-can-do/funding/plastics-innovation-fund/

[103] Plastics NZ Circular connect programme www.plastics.org.nz/environment/circularconnect

[104] Langley E. 2020. *Rethinking rubbish and recycling – online survey*. Prepared for the WasteMINZ TAO Forum by Colmar Brunton. Auckland: WasteMINZ.

Effective behaviour change requires collaboration. Local government is best placed to work in communities and communicate with households face-to-face. Many councils already undertake programmes such as bin-auditing campaigns, education to schools and community groups.

Central government also has a role to play in providing consistent national messaging and best-practice resources. This could include:

- national awareness campaigns to announce the standard list of materials that will be collected at kerbside and ongoing messaging to reduce contamination and increase recycling
- a communications toolkit for councils implementing food scraps collections
- a best-practice toolkit for councils for dry recycling.

We would like to hear from you about what other resources and initiatives would be useful.

Question

67 What research, technical support or behaviour change initiatives are needed to support the implementation of this programme of work?

Innovation

We are regulating for consistency to ensure that all New Zealanders have equal access to recycling. However, the system is open to innovation. There may be new means for collecting materials. For example, Wales has increased the use of trolibocs (a wheeled bin with compartments).[105] New packaging materials will also be developed that will require end-of-life solutions. New sustainable solutions may be found for non-recyclable packaging.

Moving forward though, attitudes will need to change. We need to move from the current mindset where manufacturers produce any kind of packaging they like and then it is up to the recycling industry to find a solution. We need instead a collaborative model where manufacturers, the recycling sector, and local and central government work together. Collectively, we need to understand what materials are fit-for-purpose in a low-emissions, circular economy and ensure that we have systems that can manage these materials.

Equally, we need to lift our gaze beyond recycling to reducing how much waste we create and to reusing materials for as long as we can. Only when products cannot be used any longer, ensuring that they can be appropriately and safely disposed of.

Implementation timeline

For some councils, the changes required may be minimal. They may already have or be planning food scraps collections. They may have already voluntarily moved to the standard set of recycled materials and, once reporting begins, they may find they have already met the minimum performance standard.

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[105] Trolibocs are used in Wales to collect recycling. They are a wheeled bin with compartments so that materials can still be collected separately. https://collectionsblueprint.wales/content/system-ailgylchu-trolibocs

For other councils, this work may require substantive change.

While any of these proposals could be implemented on their own, they have been envisioned as an entire programme of work. We have taken this into account when considering the timeline to ensure changes can be phased in (table 8).

Beyond voluntary actions, which are also possible, the Government is also in the unique position of developing new waste legislation. This means that, pending decisions, for each of the proposals in this document the choice can be made to either enact regulation under the current Waste Minimisation Act or wait until new legislation is in force.

We have also considered the alignment and timing of other Ministry initiatives under way, specifically:

- the proposed targets in both the New Zealand Waste Strategy and emissions reduction plan
- the proposed container return scheme
- developing a long-term infrastructure plan (looking at New Zealand's waste infrastructure needs).
- Regulated Product Stewardship for Plastic Packaging, which has two-and-a-half years until the design needs to be finalised. Certainty over what materials will be collected at kerbside will assist in the design considerations of this scheme
- labelling for recyclability or compostability, which investigates how to improve product labelling to make it easier for the public to understand what can and cannot be recycled. The New Zealand Food and Grocery Council is encouraging members to adopt the Australasian Recycling Label (ARL). Certainty over what materials will be collected at kerbside will assist.

Table 8: Proposed implementation timetable of these proposals and other Ministry work programmes

Timing	Kerbside	Other work programmes
2021		• Consultation on waste strategy/ legislation and emissions reduction plan conducted • National Plastics Action Plan launched • Plastics Innovation Fund opened
2022	• National education campaign planning begins for standardised materials • Some recycling facilities update processes to prepare for accepting plastic 5 • Councils with access to suitable processing facilities (eg, within 150 km) begin planning implementation of food scraps collections • Reporting requirements are developed for the private sector • **Standard list of materials agreed**	• Reporting requirements for councils start • Reporting requirements for landfills and transfer stations start • NZ Waste Strategy published • emissions reduction plan published • Long-term infrastructure plan published • Decision made on CRS • Phase out of polyvinyl chloride (PVC) meat trays, polystyrene (PS) takeaway food and beverage packaging, expanded polystyrene (EPS) food and beverage packaging
2023	• Research into participation and engagement with food scraps collections undertaken • Best practice communications developed and toolkit for food scraps collections implemented	

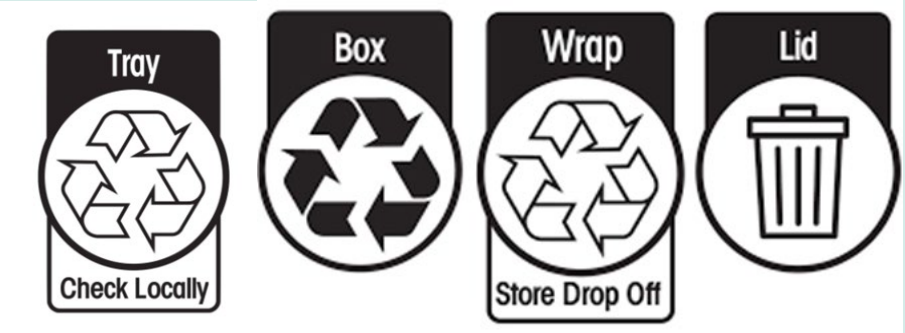
Timing	Kerbside	Other work programmes
2024	• **Reporting requirements for private sector start**	• Waste levy reaches $60 a tonne • New waste legislation enacted • Priority Product Stewardship for Plastic Packaging finalised • National Plastics Action Plan completed
2025	• **Councils with access to suitable processing facilities have food scraps collections** • Performance of kerbside collections published • Research identifying the characteristics of best practise collections starts • Toolkit for best practice collections developed	• Second emissions reduction plan released • Phase out of all other PVC and PS food and beverage packaging • Proposed CRS implemented (subject to Cabinet decision)
2026–29	• **The remaining councils implement food scraps collections if they haven't already**	
2030	• All councils reach minimum performance standard for kerbside collections • All councils have food scraps collections and dry recycling collections	• Third emissions reduction plan released • NZ Waste Strategy updated

Case study – Improved on-pack labelling

Standardising household kerbside recycling would improve the effectiveness of on-pack recycling information. Research conducted in 2018 found that even when plastic items had recycling information, or a plastic identification symbol, public awareness and recognition was low.[106] Of people surveyed, 47 per cent did not recognise the international recycling symbol and only 40 per cent understood what a plastic identification symbol meant.

In Australia, the ARL labelling scheme has been set up to improve on-pack labelling. It uses clear and consistent words and images. However, where items are accepted by some councils and not others, consumers are prompted to check with their local council. This requires a high level of effort and commitment from the public to check online before recycling.

Standardised household kerbside recycling will eliminate the need for any products to have a 'check your local council website' label.



[106] The Love Food Hate Waste Campaign evaluation asked about the public's understanding of recycling symbols. https://lovefoodhatewaste.co.nz/wp-content/uploads/2019/02/FINAL-WasteMINZ-National-Food-Waste-Prevention-Study-2018.pdf

Recap of questions: Improvements to household kerbside recycling

Full submission

Questions

31 Do you agree with the proposal that a standard set of materials should be collected for household recycling at kerbside?

32 Do you agree that councils collecting different material types (in addition to a standard set) might continue to cause public confusion and contamination of recycling?

33 Do you think that national consistency can be achieved through voluntary measures, or is regulation required?

34 Please tick below all the items from the proposed list which you agree should be included in the standard set of materials that can be recycled in household kerbside collections.

- glass bottles and jars
- paper and cardboard
- pizza boxes
- steel and aluminium tins and cans
- plastic bottles 1 (PET) and 2 (HDPE)
- plastic containers and trays 1 (PET) and 2 (HDPE)
- plastic containers 5 (PP)

35 If you think any of the materials above should be excluded, please explain which ones and why.

36 If you think any additional materials should be included, please explain which ones and why.

37 Do you agree that the standard set of materials should be regularly reviewed and, provided certain conditions are met, new materials added?

38 What should be considered when determining whether a class of materials should be accepted at kerbside in the future? (Tick all that apply)

- sustainable end markets
- end markets solutions are circular and minimise environmental harm
- viable processing technologies
- processing by both automated and manual material recovery facilities
- no adverse effects on local authorities, including financial
- supply chains contribute appropriately to recovery and end-of-life solutions for their products
- other (please specify).

39 Who should decide how new materials are added to the list?

- the responsible Minister
- Ministry for the Environment staff in consultation with a reference stakeholder group
- existing Waste Advisory Board
- an independent board
- other (please specify).

40 Do you agree that, in addition to these kerbside policies, New Zealand should have a network of convenient and easy places where people can recycle items that cannot easily be recycled kerbside? For example, some items are too large or too small to be collected in kerbside recycling.

Proposal 2: All urban populations should have access to kerbside food scraps collections

41 Do you agree that food and garden waste should be diverted from landfills?

42 Do you agree that all councils should offer a weekly kerbside food scraps collection to divert as many food scraps as possible from landfills?

43 Do you agree that these collections should be mandatory in urban areas (defined as towns with a population of 1000 plus) and in any smaller settlements where there are existing kerbside collections?

44 Do you think councils should play a role in increasing the diversion of household garden waste from landfills? If so, what are the most effective ways for councils to divert garden waste?

- Offering a subsidised user-pays green waste bin?
- Making it more affordable for people to drop-off green waste at transfer stations
- Promoting low-waste gardens (eg, promoting evergreen trees over deciduous)?
- Other (please specify)?

45 We propose a phased approach to the roll-out of kerbside food scraps collections. The timeframes will depend on whether new processing facilities are needed. Do you agree with a phased approach?

46 Do you agree that councils with access to suitable existing infrastructure should have until 2025 to deliver food scraps collections?

- yes, that's enough time
- no, that's not enough time
- no, it should be sooner.

47 Do you agree that councils without existing infrastructure should have until 2030 to deliver food scraps collections?

- yes, that's enough time
- no, that's not enough time
- no, it should be sooner.

48 Are there any facilities, in addition to those listed below, that have current capacity and resource consent to take household food scraps?

- Envirofert – Tuakau
- Hampton Downs – Waikato
- Mynoke Vermicomposting site – Taupō
- Enviro NZ – new facility planned for the Bay of Plenty in 2023
- Living Earth – Christchurch
- Timaru Eco Compost Facility – Timaru.

We propose to exclude the following non-food products and any packaging from any kerbside collection bins used to divert food scraps and/or green waste from landfills:

- kitchen paper towels / hand towels / serviettes
- newspaper and shredded paper
- food-soiled cardboard containers (eg, pizza boxes)
- cardboard and egg cartons
- compostable plastic products and packaging
- compostable fibre products and packaging
- compostable bin liners
- tea bags.

49 Are there any additional materials that should be excluded from kerbside food and garden bins? Please explain which ones and why.

50 For non-food products or packaging to be accepted in a food scraps bin or a food and garden waste bin, what should be taken into consideration? Tick all that apply.

- products help divert food waste from landfills
- products meet New Zealand standards for compostability
- products are certified in their final form to ensure they do not pose a risk to soil or human health
- products are clearly labelled so that they can be distinguished from non-compostable products
- a technology or process is available to easily identify and sort compostable from non-compostable products
- producers and users of the products and packaging contribute to the cost of collecting and processing

51 If you think any of the materials listed above should be included in kerbside food and garden bins, please explain which ones and why.

Proposal 3: Reporting on household kerbside collections offered by the private sector

52 Do you agree that it is important to understand how well kerbside collections are working?

53 Do you agree with the proposal that the private sector should also report on their household kerbside collections so that the overall performance of kerbside services in the region can be understood?

54 Do you agree that the information should be published online for transparency?

55 Apart from diversion and contamination rates, should any other information be published online?

Proposal 4: Setting targets (or performance standards) for councils

56 Should kerbside recycling services have to achieve a minimum performance standard (eg, collect at least a specified percentage of recyclable materials in the household waste stream)?

57 Should the minimum performance standard be set at 50 per cent for the diversion of dry recyclables and food scraps?

58 We propose that territorial authorities have until 2030 to achieve the minimum performance target, at which time the target will be reviewed. Do you agree?

59 In addition to minimum standards, should a high-performance target be set for overall collection performance to encourage territorial authorities to achieve international best practice?

60 Some overseas jurisdictions aim for diversion rates of 70 per cent. Should New Zealand aspire to achieve a 70 per cent target?

61 What should the consequences be for territorial authorities that do not meet minimum performance standards?

Proposal 5: Should glass and/or paper/cardboard be collected in separate containers?

62 Should either glass or paper/cardboard be collected separately at kerbside in order to improve the quality of these materials and increase the amount recycled?

- glass separate
- paper/cardboard separate
- separated, but councils choose which one to separate
- status quo – they remain comingled for some councils.

63 If glass or paper/cardboard is to be collected separately, should implementation:

- begin immediately
- wait for any CRS scheme design to be finalised
- wait until the impact of a CRS scheme has been observed.

Proposal 6: Should all urban populations have access to a kerbside dry recycling collection?

64 Should all councils offer household kerbside recycling services?

65 Should these services be offered at a minimum to all population centres of more than 1,000 people?

66 Do you agree that councils without any council-funded kerbside recycling collections should implement these collections within two years of their next Waste Management and Minimisation Plan?

67 What research, technical support or behaviour change initiatives are needed to support the implementation of this programme of work?

Part 3:

Te whakawehe i ngā para kai ā-pakihi

Separation of business food waste

Part 2 focused on household kerbside collections and how to improve the quantity and quality of materials recycled and reduce public confusion about what can be recycled. These measures should also improve the quality and quantity of materials recycled by businesses, because improved recycling practices at home may spill over into the workplace.

However, to achieve the proposed emissions reduction targets, it will not be enough to divert just household food waste from landfills. We will also need to divert business food waste.

We estimate that businesses produce around 25 per cent of the food waste sent to landfills (approximately 75,000 tonnes, forecast to increase to 100,000 tonnes by 2030).[107]

We all have a responsibility to reduce waste

The recent discussion paper on issues and options for revised waste legislation included putting individual and collective responsibility for how we all deal with unwanted material at the heart of a new regulatory framework. Proposals included legislated duties of care, which could potentially include duties for businesses and duties about food waste.

The proposed New Zealand Waste Strategy sets a target for businesses to reduce their waste by 30 to 50 per cent. An increasing number of businesses are choosing to recycle their food waste, donate surplus food to food-rescue organisations, or send food waste to be used as stock food. However, many businesses still send their food waste to landfills.

Businesses' access to food scraps collections

For businesses that are part of a large body corporation or tenants in an office block, their access to food scraps recycling services may be out of their individual control. Other businesses may be in areas without a food scraps collection service. Some regions have no facilities to process food scraps into compost or anaerobic digestate, so recycling companies are unable to offer food scraps collections.

More businesses are trying to measure and reduce their carbon footprints and diverting food waste from landfills will help them achieve their own emissions targets.

Case study – Businesses committed to diverting food waste from landfills

Countdown and Foodstuffs have goals to send zero food waste to landfills by 2025.

SKYCITY Auckland has successfully tackled its food waste, diverting nearly 500 tonnes – the equivalent weight of 142 buses – from landfill to become compost for kiwifruit orchards and landscaping companies.

Sylvia Park, New Zealand's largest shopping mall, generates 600 tonnes of waste per year – around 50 per cent of which is food waste. This food waste is also sent for composting.

[107] B. Middleton. Waste Not Consulting, pers. comm., 2021.

What we are seeking feedback on

We are seeking feedback on the need and means to divert business food waste from landfills to reduce emissions. An analysis of possible options can be found in the accompanying interim regulatory impact statement.

In this consultation document, we present the most feasible options and then explain our preferred option. We are seeking your feedback on the preferred option and how we propose it would be implemented. We are also open to hearing whether any other options would be equally effective.

Policy objectives

The proposal to divert business food waste from landfill aims to achieve the government policy objectives of firstly moving to a low-emissions future to prevent and limit further impacts from climate change and secondly moving to a circular economy where no materials are wasted.

Options considered

We have considered five options to divert business food waste from landfills. These options can be viewed in the accompanying interim regulatory impact statement. The three leading options are:

1. *Source separation is phased in for businesses that produce or sell food only.* Businesses that produce and/or sell food are likely to generate the most food waste. These businesses could be obliged through regulation to collect food waste separately from other materials. Those businesses with access to existing food waste collection providers would have a shorter lead time than those that do not. Only businesses that are registered under the National Food Act[108] would need to separate food waste. This could include farms, cafés, hospitals, rest homes, supermarkets and factories that produce food.
2. *Source separation is phased in for all businesses.* All businesses could be obliged through regulation to collect food waste separately from other materials. Those businesses with access to existing food waste collection providers would have a shorter lead time than those that do not.
3. *Prohibit disposal of all food waste to landfill.* Businesses would not be permitted to landfill food waste.

[108] New Zealand Food Act section 36 www.legislation.govt.nz/act/public/2014/0032/latest/DLM2996123.html?search=ts_act%40bill%40regulation%40deemedreg_food+act_resel_25_a&p=1

We propose source separation is phased in for all businesses

Unlike household food waste, where we have reasonable data and can estimate the impact of different recycling options on waste tonnage and emissions, very little is known about business food waste, and data to support decision-making is limited. We do know that not every business or every town has access to business food waste collections. We also know that businesses are increasingly trying to reduce their emissions and that some are focusing on reducing food waste and diverting it from landfills.

Phasing in of requirements

Because of the level of infrastructure investment required for business food scraps collections, we propose to phase in the requirement for food waste separation, as we recommended for household food scraps collections.

One approach could be that businesses in metropolitan areas[109] that are within 150 kilometres of suitable processing facilities for food waste have until 2025 to separate their food waste. Businesses further away or outside these areas would have until 2030 as facilities become available. Of New Zealand's metropolitan areas, only Wellington, Lower Hutt and Dunedin do not have access to suitable facilities.[110]

If a ban on food waste sent to landfills eventually becomes necessary to reduce emissions, this option would ensure that the required infrastructure would be in place.

We are open to whether there should also be a phasing in of businesses that produce more food waste over businesses that produce less. There are additional compliance costs in the implementation phase in terms of identifying businesses who produce greater amounts of food and whether they have complied. However, the impact on smaller businesses may be more significant and therefore a longer lead-in time may be fairer.

How do we identify businesses who produce more food waste?

Scotland used the weight of food waste per week to distinguish high food waste generating businesses. Businesses in non-rural areas that produced 50 kilograms or more of food waste per week had a two-year implementation time, whereas businesses that generated 5–49 kilograms had six years to implement.

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109 Stats NZ defines a metropolitan area as having more than 100,000 residents living in the urban centre. Functional urban areas – methodology and classification | Stats NZ.

110 Wellington has existing food waste collections, but the composting plant at the Southern Landfill does not have capacity to take a significant increase in food waste at this stage.

The New Zealand Food Act requires businesses that make or sell food to be registered and complete either a food control plan or a national programme, with exceptions made for smaller businesses.[111] Businesses registered under the Food Act could be used as the criterion to identify businesses that are likely to produce more food waste.

How much food waste do we produce?

- The average New Zealand household produces 3 kilos per week.
- The average office worker produces 0.6 kilos per week, so an office with 50 full-time employees would generate 30 kilos per week.
- The average New Zealand café produces 67 kilos per week.
- The average New Zealand supermarket produces 1173 kilos per week.

Should any businesses be exempt?

Household food scraps collections are only being proposed for towns with a population of more than 1000 residents, or towns with existing kerbside collections. Should the requirement for businesses also be limited to those in towns with populations of more than 1000 residents?

On one hand, businesses in rural areas may have less access to recycling collections to process their food scraps. However, they may be better able to manage their food scraps themselves once separated, by donating to a local pig farmer or by composting onsite or through community composting.

Support for businesses to reduce food waste

We want to understand what types of support businesses need to reduce their waste. In New South Wales, the Environmental Protection Agency offers a programme called Your Business is Food, where companies can get assistance to reduce their food waste. In the United Kingdom, WRAP has developed resources and programmes to reduce business food waste.

Pushing up the waste hierarchy

Businesses will have choices about how to deal with their food waste once it is separated. Some may choose to send it for composting or anaerobic digestion through their waste company. Others may choose to compost their food scraps onsite or in community gardens, to give their scraps to a local pig farmer, or to increase the amount of edible food they donate to food rescue.

While it is important to divert food waste from landfills, the greater opportunity is to reduce the amount of food waste generated in the first place. A global study found that for every $1 invested by a business in reducing their food waste, $14 is saved.[112] By separating out their food waste, businesses will have a clearer idea of how much food is wasted, and they may be more motivated to reduce their total waste.

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[111] The list of businesses exempt from food-control plans can be found here www.mpi.govt.nz/food-business/exemptions-food-act-requirements/exemptions-plans-programmes/.

[112] Champions 123 (2017) *The business case for reducing food waste and loss.* https://champions123.org/publication/business-case-reducing-food-loss-and-waste.

Questions: Separation of business food waste

Full submission

Proposal: Source separation of food waste is phased in for all businesses.

68 Should commercial businesses be expected to divert food waste from landfills as part of reducing their emissions?

69 Should all commercial businesses be diverting food waste from landfills by 2030?

70 Should separation be phased in, depending on access to suitable processing facilities (eg, composting or anaerobic digestion)?

71 Should businesses that produce food have a shorter lead-in time than businesses that do not?

72 Should any businesses be exempt? If so, which ones?

73 What support should be provided to help businesses reduce their food waste?

Appendix 1: Further analysis of the proposed scope of containers within the NZ CRS

Obligations for beverage producers and importers

Beverage producers/importers would need to sell their products in accordance with the scheme and the regulated scope of containers. In practice, beverage producers/importers would need to establish a contract with the scheme's managing agency, potentially through a licensing mechanism, to sell their beverage products in New Zealand.

Container labelling would be a legal requirement and would likely include a scheme logo, barcode, the deposit/refund amount, and any security features deemed necessary.

Suppliers exporting eligible containers outside New Zealand would be eligible for an exemption from the scheme fees for the exported containers. The scheme's managing agency would be responsible for establishing appropriate processes for managing imported and exported beverage control measures.[113]

Proposed eligible containers in the NZ CRS

Glass beverage containers

Glass beverage containers are included in most overseas CRS, including all Australian schemes.

Our current recovery and recycling rates for glass remain relatively low compared to most schemes that include glass. In 2018/19, New Zealand's recovery rate for glass (beverage and non-beverage) was 60 per cent (upper figure), and the bottle-to-bottle recycling rate was 48 per cent. As a proportion of total glass beverages to market, kerbside recovery rates for glass have declined slightly in 2020/21 for many Councils. In contrast, CRS glass recovery is typically over 80 per cent in Europe and Canada.

Our low recovery rates result in litter. 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.

New Zealand has one glass bottle manufacturing plant in Auckland. It recycles less than half the amount of glass sold as beverage containers in New Zealand each year (excluding glass jar and non-beverage containers). The additional volume of recovered glass not able to be remade into new bottles is in oversupply with limited alternative onshore market opportunities that are sustainable. Manufacturing glass is very carbon intensive, and so using the oversupply as a substitute for aggregates, or simply stockpiling the glass, has carbon implications and limits its circularity.

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[113] GS1 data suggests that 25 per cent of all beverage packaging material is imported in New Zealand (the vast majority is glass, at 21 per cent).

The existing furnace capacity of the glass manufacturing plant could be more effectively used, 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 of a NZ CRS (eg, eco-modulation fees and targets for refillable beverage containers) are not also approved. See the interim regulatory impact statement for further discussion on glass issues and options.

In addition to market issues, the cost benefit analysis on the option of a NZ CRS reported that excluding glass containers from the scheme would significantly reduce the overall benefits of a NZ CRS due to the size of the glass market. Glass accounted for about 41 per cent of all beverage containers sold in New Zealand and a 'glass-out' CRS would reduce the scheme's benefit cost ratio from 1.61 to 1.10 .

Some industry participants are opposed to including glass in a CRS. This includes the Glass Packaging Forum (GPF), which runs a voluntary accredited product-stewardship scheme that primarily leverages the rates-funded household kerbside system. The scheme participants and the glass and alcohol industry pay a small levy into the GPF scheme, which is used to fund projects that increase glass recovery.

Other beverage industry stakeholders strongly support glass being included in a NZ CRS. Non-glass and non-alcohol beverage industry stakeholders, and some craft brewers (who tend to use less glass in favour of cans and kegs), favour this proposal. This is because the exclusion of glass from a NZ CRS would create a very unequal playing field within the beverage industry. Also, excluding glass could encourage more producers to switch to glass from other recyclable packaging formats (eg, aluminium). With New Zealand's onshore furnace capacity limited to approximately half of all glass sold, this would only exacerbate the existing oversupply issue.

In addition to, and through a CRS, the Ministry is considering solutions to increase bottle-to-bottle recycling for New Zealand's recovered glass. Options include:

- recycled content requirements for all glass containers, not just those produced in New Zealand
- the development of new end markets for bottle-to-bottle recycling (offshore if necessary)
- investment in increased domestic capacity
- the application of an eco-modulation fee to incentivise the market
- polices and investments that support a transition to refillable glass containers.

Glass beverages are proposed to be included in the NZ CRS

As noted, we are proposing to include all single-use glass beverage containers in the NZ CRS. Including glass alongside other regulatory proposals 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 in kerbside collections
- reduce the cost of kerbside collections for ratepayers
- create a level playing field for all beverage producers
- create a convenient and simple scheme for consumers and businesses to use.

Plastic beverage containers

Plastic beverage containers are included in nearly all overseas CRS.

The build-up of plastic in the environment is a top concern for New Zealanders.[114] If current trends continue, the Ellen MacArthur Foundation has predicted there will be more plastic than fish in the sea by 2050. In 2021, the University of Canterbury published the first evidence of airborne microplastics in New Zealand.[115]

'Plastic' includes several different types. Plastics 1 (PET), 2 (HDPE), and 5 (PP) are conventional packaging plastics that are readily recyclable onshore in New Zealand. They are higher value plastic types with growing onshore processing capacity and good markets both onshore and overseas. The two main plastic beverage container materials are PET and HDPE.

Common plastic beverage containers	
Polyethylene Terephthalate (PET, 1)	Often used for soft-drink bottles and bottled water
High Density Polyethylene (HDPE, 2)	Often used for milk bottles and dairy-based drinks
Polypropylene (PP, 5)	Less commonly used, but can be used for some beverage lids and caps, and beverage pouches

In 2019, the Office of the Prime Minister's Chief Science Advisor's report *Rethinking plastics in Aotearoa New Zealand* estimated New Zealand imports 575,000 tonnes of plastic resin and plastic materials. Given the significant volumes of virgin materials coming into the domestic economy, and consumer demand for better outcomes and products made from plastics, our onshore plastic reprocessing and recycling industry is growing.

However, while we have businesses and plants already operating across New Zealand, these facilities could do significantly more. Relative to the size of the market opportunity (virgin materials imports), onshore processing and manufacturing for recycled content is only just getting started. New Zealand's onshore plastic reprocessing and recycling industry needs systems that recover a lot more, and cleaner, separated materials to grow further. Increased recovery of cleaner, separated plastic beverage materials through a NZ CRS would support our onshore domestic plastics recyclers and better enable more bottle-to-bottle recycling in New Zealand.

In 2020/21, approximately 587 million plastic beverages were sold. Of this, fresh milk and cream accounted for 177 million plastic containers, followed by carbonated beverages (147 million plastic bottles) and water (115 million plastic bottles). In 2019, only 33 per cent of plastic bottles were recovered for recycling. Introducing a scheme that accepts single-use plastic beverages would see significantly increased recovery of plastic beverages for recycling, alongside significant litter reduction.

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[114] Nearly 70 per cent of New Zealanders have high concerns about the build-up of plastic in our environment, according to the 2020 Colmar Brunton *Better Futures* survey.

[115] Revell L, Kuma P, Le Ru, E, Somerville W, Gaw S. 2021. *Direct radiative effects of airborne microplastics.*

All single-use plastic beverage containers are proposed to be included in a NZ CRS

As noted, we propose to include all single-use plastic beverage containers (including PET, HDPE, PP, and bio-based HDPE and PET) in the NZ CRS to increase recovery for recycling and to reduce litter. While PP is less commonly used, it is included because it is easily recyclable and can be used for some beverage lids and caps.

The exception to this proposal is fresh milk beverage packaging (in all packaging types), which is proposed to be exempted at this stage.

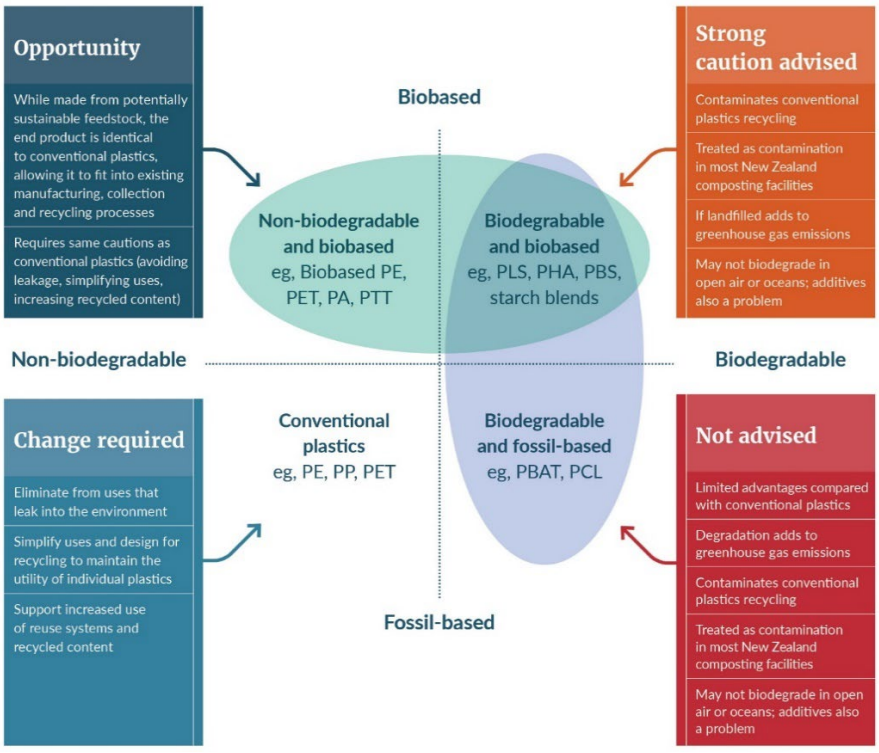
Recyclable bio-based plastics are proposed to be included

Conventional plastics are fossil-fuel-based, while bio-plastics are made from plants or a combination of plants and fossil fuels. Most plastic beverage containers in New Zealand are likely to be conventional plastics (bottom left of figure 8; PET, HDPE and PP), but some bio-based plastic beverage containers may be in circulation in New Zealand (eg, plant-based plastic water bottles).

Bio-based materials can be made to be either recyclable or compostable, but they cannot be both. PET and HDPE plastics can be made from biobased materials and recycled. For example, Ecostore's recyclable plastic bottles are sugar cane-based HDPE. Other plastic bottles made from bio-based materials are designed to be composted and are not recyclable. Unfortunately, these two types of bottles can look identical and often end up contaminating the recycling and composting facilities when a plastic bottle is mistakenly placed in the wrong system.

There are other issues associated with compostable packaging. The Ministry for the Environment has outlined its views on compostable packaging and appendix 3 has further information.

Figure 13: Differentiation of biodegradable plastics, adapted from Parliamentary Commissioner for the Environment



Bio-based plastics are a relatively small section of New Zealand's beverage market. We propose that recyclable bio-based PET and HDPE beverage plastics are included in the NZ CRS due to the potential these alternatives provide for emissions reduction, and given they are compatible with our conventional recycling systems. The aim of the NZ CRS is to reduce beverage container litter and increase recycling, rather than capture biodegradable or compostable material, which is often a contaminant in the recycling stream.

Metal beverage containers

Metal beverage containers are included in nearly all overseas CRS. These are mostly aluminium cans, but some schemes also include lower value ferrous metals (such as steel, tinplate and bi-metal cans or tins). Aluminium currently has the highest per tonne recycling market value of any beverage container material.

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

It is estimated that, in 2019, New Zealand's resource recovery systems captured less than half (estimated at 45 per cent) of the metal beverage containers sold. If metal beverage containers are included in a NZ CRS, this could significantly increase recovery rates to 85 per cent or more.

As noted, we propose to include single-use metal beverage containers in the NZ CRS. This would include both aluminium cans (a high-value recycling product) and beverage containers made from non-ferrous metals (eg, steel, tinplate and bi-metals). You may have already seen some cans with a bottle return logo on them for an Australian CRS.

Given aluminium cans are a valuable commodity, are highly recyclable, reduce emissions when recycled and have good circular potential, eco-modulation of the scheme fee would mean beverage producers using aluminium cans could have their scheme fees reduced as an incentive.

Liquid paperboard (LPB) beverage containers

LPB is an aseptic, long-life, shelf-stable packaging option. LPB is often used for drinks such as UHT (long-life) milks, plant-based milks, and juices. LPB beverage containers are included in less than half of schemes globally. LPB is most accepted in Australian and Canadian schemes.

The LPB beverage container market has grown rapidly in New Zealand (34 per cent in the past two years), accounting for 7 per cent of our domestic beverage container market in 2020/21 (174 million LPB beverages).

Currently only two councils collect LPB, although it is unclear whether the material is treated as contamination (waste), or able to be recycled at its end destination 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.

Given that LPB recovery via household kerbside services is very limited in New Zealand and that we are proposing to remove LPB from all household kerbside recycling collections across New Zealand (see Part 2, Improving Household Kerbside Recycling), it is appropriate that LPB be included within a regulated product-stewardship scheme.

Tetrapak, a large multinational producer of LPB containers, is supportive of its products being included within the NZ CRS and is developing a LPB waste-to-building materials plant with scalable capacity. Tetrapak says that it can take up to 4,000 tonnes of LPB material per year, which is about half of the estimated tonnage sold in New Zealand in 2021.

LPB beverages are proposed to be included in the NZ CRS

As noted, we propose to include all single-use LPB beverage containers in the NZ CRS, except for fresh dairy milk LPB containers.

LPB products (eg, the cartons sometimes used for milk products, plant milk alternatives and juices) are made from a combination of plastic, aluminium and fibre. Recycling these cartons is possible but requires scale and energy-intensive processing technology to separate out the materials, which New Zealand does not have. As a result, these container types are sent to landfills or, at best, downcycled.

Better outcomes are possible for the majority of LPB containers if they are included in a NZ CRS, including:

- providing the means to collect greater quantities and cleaner streams of LPB (which would otherwise be landfilled or contaminate the kerbside recycling stream)
- improving 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 landfills.

Tetrapak developing an onshore waste-to-building materials plant with scalable capacity, being fed by the recovery of post-consumer beverage LPB.

Excluding LPB from the NZ CRS could have a free-rider effect and incentivise producers to switch to LPB as a cheaper packaging option.

Eco-modulation of the scheme fee could mean that producers of harder to recycle packaging such as liquid paperboard (LPB) and glass would likely have a slightly higher scheme fee, given there is limited market demand for the recovered materials onshore and they are more likely to be downcycled in New Zealand. This would ensure recycling of LPB is achieved (whether domestically or exported). This is proposed because of the recycling limitations of this packaging material and to incentivise movement toward greater recyclability.

Out-of-scope containers

Non-beverage containers

Most overseas schemes exclude all non-beverage single-use containers, such as kitchen and laundry products (eg, detergents), garden products (eg, garden sprays) and bathroom products (eg, shampoo).

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. They are not commonly found in the litter stream because, like fresh milk, these products are more commonly consumed at home and are captured through household kerbside recycling. Non-beverage food-grade plastics (eg, ice cream and margarine tubs) are also not commonly found in the litter stream and are more commonly consumed at home.

Non-food grade plastics (eg, kitchen, bathroom, laundry, garage and garden products) typically contain chemicals. Exclusion of these types of products also ensures NZ CRS materials are higher (food-grade) quality and therefore have a higher market value. They are therefore more likely to remain in closed-loop (container-to-container) recycling systems.

As noted, we are proposing to exclude non-beverage containers from the NZ CRS at this stage. The Government has several key commitments in progress to address non-beverage packaging:

- standardising household kerbside recycling, which captures most 'non-beverage' materials (see Part 2 of this document)
- 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 $124 million COVID-19 Response and Recovery Fund investment
- the $50 million Plastics Innovation Fund.

Cups and coffee cups

Cups and coffee cups are not included in the NZ 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).

No national recycling system for conventional takeaway coffee cups exists in New Zealand, as takeaway paper coffee cups are often lined with plastic (PE or PLA), which makes them unrecyclable. It is estimated that 295 million hot and cold single-use cups (including coffee cups) are sent to landfills every year in New Zealand.[116] Only about 10 composting facilities in New Zealand take compostable coffee cups, and even they have voiced concerns about residual plastic in the compost.

Single-use cups (other than coffee cups) are generally made from PET, polystyrene and PLA and can look identical. Accepting one type of recyclable single-use cup (eg, PET) in a scheme and prohibiting others that are less recyclable (eg, PLA or PHA) would make it hard for users and recyclers to tell the difference.

Reusable systems for cups may provide one alternative solution to single-use cups. For example, in the past eight years across New Zealand and Australia, the company Globelet has prevented 21 million disposable cups from going to landfill by providing a reusable cup system.

[116] Reported by the Packaging Forum.

Feedback from recent public consultation to phase out certain plastic packaging showed broad support for taking action to reduce single-use cups and coffee cups.[117] This included feedback from business and industry, NGOs and individuals.

In response to the feedback received through public consultation on proposals to phase out certain plastics, a parallel work programme is under way by the Ministry to coordinate sector experts and inform a plan for single-use cups and coffee cups. This will inform possible options for phasing out these cups by 2025.

Proposed to be excluded at this stage

Most beverage containers that are 3 litres or smaller in New Zealand can be categorised into single-use plastic, metal, glass and liquid paperboard containers.

As noted, we are proposing that all beverage containers made from materials or any combination of materials other than those within scope (eg, metal, PET, HDPE, PP, bio-based HDPE and PET, glass and LPB containers) would be initially excluded from a NZ CRS. Beverage containers that are not within this material criteria likely constitute a small volume of 'niche' containers (eg, compostable plastics, biodegradable plastics, bladders and pouches). These beverage containers are often more difficult to recycle than conventional beverage containers made from the materials proposed to be included in the scheme.

Beverage producers that sell containers outside the scope of the NZ CRS are proposed to be excluded at this stage. To be considered for inclusion they would need to be assessed on a case-by-case basis by the scheme managing agency and government agency responsible for the scheme.

For a product to be recycled there must be an existing collection, sorting and recycling system in place for the packaging. Packaging may be unrecyclable because of the size, shape, colour and the materials or combination of materials used.

Biodegradable and compostable plastics

We are proposing to exclude biodegradable plastic bottles from a NZ CRS. This includes both fossil-fuel-based and bio-based products (right-hand top and bottom panels of figure 8), as these products contaminate the recycling stream, and many composting plants will not accept them. It is also unclear what the benefits of a compostable drink bottle would be, given that were it to become mainstream and replace PET and HDPE, the quantity requiring composting would exceed 580 million plastic containers per year. Compostable packaging is being addressed through another part of the Ministry's waste work programme.[118]

This proposal aligns with the proposals to improve household kerbside recycling nationally (Part 2), which includes a proposal to exclude compostable packaging from kerbside recycling, as it is not designed to be recyclable.

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[117] Public consultation in 2020 on proposals to phase out specific hard-to-recycle plastics and single-use plastics showed strong support for phasing out single-use plastic cups. Additionally, around half (49.5 per cent) of the submitters wanted coffee cups phased out.

[118] https://environment.govt.nz/what-government-is-doing/areas-of-work/waste/

The Ministry has developed a position statement on the use of compostable packaging, and is currently scoping research to better understand the impacts of compostable plastics on soils and the food chain. This will enable consideration of overseas standards for compostable packaging in New Zealand.

Hard-to-recycle plastics

We are proposing to exclude hard-to-recycle plastics (types 3, 4, 6, and 7) from the NZ CRS. This is consistent with recent decisions to phase out certain hard-to-recycle plastic packaging, such as food and drink packaging made from PVC (3) and polystyrene (6).[119] 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 post-consumer recovery system.

As discussed, some beverage products fall within the eligible scope of the NZ CRS but are proposed to be exempt from the scheme. We are proposing that fresh milk in all packaging types and refillable/reusable beverage containers are exempt from the scheme. Information can be found in Part 1, 'Specific beverage types proposed for exemption'.

Container size

In overseas schemes (where information on eligible beverage container sizes is available), the following broad categories for container size are used:

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

As noted, we propose that the size of eligible beverage containers would be less than or equal to 3 litres in volume, and that there would be no lower limit for beverages. We note that some Australian schemes, such as in Queensland and New South Wales, specify a lower size limit of 150 millilitres. However, we propose no lower limit to ensure a broad scope of beverages are captured in the NZ CRS and to simplify the scheme.

In New Zealand, only 1.1 per cent of containers are 150 millilitres or less, so excluding beverage containers this size 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 is a key reason for having no lower limit for the scheme.

[119] In June 2021, the Government announced the phase-out of certain hard-to-recycle plastic materials and six single-use plastic items. The phase-outs are being done in stages from 2022 to 2025, and include polystyrene and PVC food and beverage packaging, all degradable plastic products (eg, oxo and photo degradable) and single-use plastic items such as cotton buds, drink stirrers, produce bags, produce labels, straws and tableware (plates, bowls, cutlery).

Appendix 2: Metal and plastic lids for bottles and containers

As outlined in the consultation document, we are seeking feedback on how lids can be effectively recycled both in the NZ CRS and household kerbside recycling.

Recyclability of lids

Lids are often not captured in current kerbside recycling systems, because they are too small for existing automated and manual sort lines at recycling plants. When left on, the lids may not always be able to be separated from the container. The Sustainability Trust estimates that every year 2500 tonnes of loose lids are disposed of through rubbish or recycling bins in New Zealand. Most of this ends up in landfills.[120]

When left loose on automated sorting lines, lids and caps often fall through the trommels and are sent to landfills. In some situations, lids can also end up contaminating fibre bales if they are caught up in fibre during processing. On manual sort lines, loose lids are too small to be easily picked out in time.

When lids are left on bottles, the bottles are often recycled half full whether with milk that has gone off or a fizzy drink that has gone flat. The jolting of containers along the conveyor belt also often separates the lids from the containers.

Other factors that in the current context hinder our ability to recycle lids and/or their containers include:

- When wine bottles are recycled with the lids on, the metal lids are a contaminant and the lid and neck of the wine bottle need to be removed before the glass can be recycled. The remaining metal lid and glass is too contaminated to be recycled.
- Lids can be made from plastic or metal or a combination of plastic and metal. Mixed materials can be particularly challenging to recycle.
- Lids left on containers increase the likelihood that food and liquid remain inside, contaminating the container.

Plastic lids can be recycled if left on the bottles and containers or if collected at drop-off points and baled. Metal lids from tin cans are recyclable if they are placed inside the tin and the opening is crushed so the lid cannot fall out. Some metal lids can only be recycled if collected separately (eg, non-twist crown caps from beer bottles). If left on a glass bottle, metal lids will be smashed off and sent to the landfill. If left loose, they will be too small to recycle.

[120] https://sustaintrust.org.nz/our-recycling-programmes/lid-recycling

Littering of lids

Lids are also frequently littered. The Keep New Zealand Beautiful 2019 National Litter Audit reported that metal bottle caps, lids and pull tabs ranked as the fifth most littered object sub-category (2500 in total; 5 items per 1000m²). Plastic bottle tops were also frequently littered (730 in total).

Types of lids

Beverage lids can include, for example, tethered caps, metal pull-tabs (eg, on cans), metal crown caps (eg, beer bottle caps), metal screw bottle tops (eg, wine), plastic or metal ring-pull caps, and plastic screw caps.

Non-beverage container lids are primarily metal lids from tin cans (cat food or baked beans), or plastic lids for containers (ice cream, hummus), or non-beverage bottles (cleaning products). Plastic lids are typically made from either HDPE plastic 2 or PP plastic 5, both of which can be recycled. In many cases, though, the lid is a different plastic to the container.

In determining how lids should be recycled, whether under a CRS scheme or via a kerbside we need to consider:

- whether different collection types (CRS and kerbside) may have a different approach to lids
- whether all containers should be collected with lids on or only beverage containers
- how lids that cannot be placed back on should be collected.

Beverage container lids

As outlined in Part 1 on a NZ CRS, we are seeking feedback on beverage lids. This includes whether 'lids-on' should be encouraged for beverage containers that can have their lids put back on, and whether (and how) the scheme should provide alternative means to capture and recycle beverage container lids that cannot be put back on the container.

There are initiatives under way or in trial to capture more beverage container lids, such as the Sustainability Trust's bottle-top and lid-collection trial in Wellington[121] and the Lions Club's Kantab project where can tabs are donated, with the funds supporting Kidney Kids NZ.[122]

As noted, a 'lids-on' requirement tends to see a higher total volume of plastic lids recycled, because it is easiest for the consumer if lids and containers are recycled together. For example, schemes in Norway, Estonia, Oregon and Lithuania have an estimated 90 to 99 per cent of PET bottles returned with lids on, and the lids are separated later through mechanical or optical sorting. If aluminium lids were left on wine bottles, additional investment in sorting equipment would be needed to separate the lids from the glass necks of the bottles, as the high-value aluminium is currently landfilled as contamination.

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121 https://sustaintrust.org.nz/our-recycling-programmes/lid-recycling

122 https://www.lionsclubs.org.nz/partnerships/our-partners/kidney-kids

However, some CRS schemes – for example, in New Brunswick and Saskatchewan in Canada – collect lids separately and report high lid-recycling rates. Metal lids from beer and cider bottles and rip tabs from aluminium cans are not always able to be returned with their lids on. Reverse vending machines could be designed with slots for returning these lids. Where depots are used for returning containers, separate return slots or bins could be used for lids.

Alignment between CRS and kerbside

Part 2 of this consultation document considers what materials should be collected in household kerbside systems. Previously, there was no consistency across councils as to whether lids were accepted for recycling or not, and whether they needed to be left on or recycled loose. Over the past few years there has been greater alignment across councils.

Table 9: Number of councils accepting lids in household kerbside recycling

Lids accepted (left on)	Lids accepted (loose)	Lids accepted loose or left on	Lids not accepted
8	6	5	44

Aligning kerbside recycling and a CRS to recover lids has challenges (see table 10 for pros and cons of the various approaches). This is important because some members of the public will still choose to recycle their beverage containers through household kerbside recycling.

Table 10: Alternative approaches to collection of lids in CRS and kerbside recycling

Collection system	Pros	Cons
CRS – lids-on	• likely to be readily accepted by consumers if it fits within their existing habits and is convenient • limits odour and hygiene issues for collection of beverage containers, such as flavoured milk and wine bottles • likely to increase recovery of lids and reduce littering.	• would create inconsistencies with current kerbside collection systems for non-beverage containers if they remain 'lids-off' • requires alternative collection system for some beverages (eg, some beer bottle caps), which cannot be screwed back on • also requires a processing solution for the separation of wine bottle necks and lids (to remove contamination and increase aluminium recovery).
CRS – lids-off (lids collected separately eg, through chute in reverse vending machine or at a depot)	• may be able to achieve some level of recovery of lids, if well-managed • greater potential for consistency with current kerbside systems.	• no incentive to recycle lids as the refundable deposit does not apply to the lids (there is some evidence that lids are still littered in schemes that require lids off) • more likely to cause odour and hygiene issues at retail and other drop off locations for collection of beverage containers, such as flavoured milk and wine bottles.
Kerbside – lids-on	• consistency with CRS if that scheme is lids-on • may match existing habits and practices for people, particularly for soft-drink and water bottles • if lids can be dealt with at recycling re-processors, could increase overall capture (ie, if people have to drop	• food containers presented with lids on are more likely to be dirty • Non-beverage lids frequently get separated from the container during transport and sorting, and lids become a contaminant in other recycling streams (eg, fibre), or are disposed of in landfill

Collection system	Pros	Cons
	lids off somewhere else, lids may just go in the bin rather than being dropped off separately for recycling).	• coloured lids left on may reduce value of the main recyclate.
Kerbside – lids-off	• councils already standardise towards this option • industry preference is for lids-off (for the reasons outlined in the 'cons' column for lids-on) • less likely to have contamination from contents.	• potential for inconsistency with CRS, leading to confusion • lids unlikely to be collected separately for recycling • a requirement to collect lids will follow through to changes in collection, sorting and processing that better enable their collection and recycling.

The extent to which there are alternative ways to recycle beverage and non-beverage lids is important to consider. If more community recycling centres are developed, if depots for a NZ CRS also begin to collect a wider range of items, or if schemes such as the Lions Club's Kantab are widely promoted then more lids may end up being recycled.

Recommendations

The CRS proposals suggest that:

- beverage containers are collected where possible with lids-on
- the scheme provides a mechanism for beverage container lids that cannot be returned on the bottle to be collected
- a technology is introduced to remove the metal lids from wine bottles and capture both the metal lids and glass for recycling.

For household kerbside recycling, we are open to the best solution for both beverage and non-beverage container lids. In 2019, the recommendation was that lids should not be collected in kerbside recycling. However, if the CRS is able to provide a drop-off mechanism for collecting loose beverage lids and if it can ensure that when metal lids are left on glass both can be captured, then there may be merit in lids-on at kerbside. It is also worth noting that, since 2019, plastic lids have been included under priority product stewardship for plastic packaging.

We are conscious that clear, consistent and simple messages work most effectively to change behaviour. However, we are also keen to improve the quality and quantity of materials recycled and leaving lids on means that containers are more likely to be dirty or partially full. We are interested in hearing the views of the public and recyclers before making a final decision on whether to accept lids on containers at kerbside or whether other mechanisms would be more effective.

Appendix 3: Additional information on materials proposed to be included and excluded from kerbside recycling

Included materials

Glass

Capacity for bottle-to-bottle recycling in New Zealand is limited and the only glass recycling plant is based in Auckland. The cost of shipping glass to the North Island is expensive for councils in the South Island, so glass is often crushed and used for roading there or stockpiled and/or landfilled. Appendix 1 of this document and the interim regulatory impact statement discusses the markets for glass in more detail and the impact of improved glass sorting.

Plastic containers and plastic trays 1 (PET)

Some councils stopped collecting plastic trays made from plastic 1, as they were unable to separate out trays made from plastic 3 PVC, which could not be recycled. PVC trays are due to be phased out by late 2022, allowing PET trays to be recycled by all councils.

Coloured PET

Some councils have stopped collecting coloured PET as they no longer have a market for this material. Coloured PET is mostly used in beverage containers, so the proposed CRS scheme will be looking for additional markets and solutions for this material. Manufacturers are encouraged to move to clear PET, wherever possible as it has a wider range of end uses and stronger markets.

Plastic containers 5 (PP)

Onshore recycling markets for plastic 5 are strong and New Zealand is importing recycled plastic 5 due to a shortage. Prices for this plastic are close to $500 per tonne. There are also strong offshore markets.

Changes may be needed to some collection and processing facilities but increasing the collection of plastic 5 is a key opportunity to move to a more circular economy and to process recycled materials onshore. The Government has already offered funding to purchase optical sorters to recycle plastic 5. Seven of the nine recycling facilities that lack this capability took up this opportunity with two recycling facilities declining and choosing not to collect plastic 5.

Paper and cardboard

The composition of paper and cardboard collected at kerbside is changing as people move away from newspapers and magazines to virtual publications, and as the amount of fibre-based food packaging increases. Prices for paper and cardboard have been volatile as markets shift, and COVID-19 has also disrupted manufacturing and shipping. New Zealand can only recycle half the amount of paper and cardboard collected here, so reducing contamination is key to maintaining access to overseas markets.

Pizza boxes

Some recyclers do not accept pizza boxes because of concerns about contamination by uneaten pizza left in the box. However, an audit of pizza boxes found that only 8 per cent contained food when recycled.[123] Messaging on pizza boxes could deal with this issue.

Figure 14: Pizza box found in recycling with uneaten contents

Excluded materials

Plastic 3 (PVC) and plastic 6 (PS)

The Government is phasing out many types of household packaging made from plastic 3 (PVC) and plastic 6 (PS).[124] By late 2022, PVC meat trays and PS takeaway food and beverage packaging will be phased out. All other PVC and PS food and beverage packaging will be phased out by mid-2025. These types of plastic have limited recycling markets and can contaminate the recycling of high-value plastics like plastic 1 PET.

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[123] Yates S. 2019. *Rethinking rubbish and recycling*. Prepared for the WasteMINZ TAO Forum by Sunshine Yates Consulting. Auckland: WasteMINZ.

[124] https://environment.govt.nz/what-government-is-doing/areas-of-work/waste/plastic-phase-out/

The average household uses only 0.86 kilograms of these plastics per year.[125] Only eight councils collect PVC, and four councils collect PS. Neither of these plastics are being recycled by the councils collecting them, and they are likely being landfilled. To send them offshore for recycling would require a recycler to have an identified international market where the waste can be processed responsibly, then they would have to apply for an export permit through the EPA, and finally obtain prior consent from the destination country.

Plastic 4 (rigid LDPE and plastic) and 7 (all other plastics)

Plastic 4 rigid is made from low-density polyethylene and is mainly used to hold liquids such as tomato sauce, mustard and hair dyes. The average household uses 0.1 kilogram, or two of these items each year. Many brands make similar products with PET or glass packaging, which can be recycled at kerbside.

Plastic 7 is the identification code for any plastic not covered by plastics 1–6. It includes both recyclable plastics and compostable plastics, creating confusion for consumers. The average household uses 0.3 kilogram, or seven of these items a year. Only four councils accept plastic 7 and seven councils accept rigid plastic 4. Only one council that we are aware of is sending rigid plastic 4 for recycling offshore; the other councils are likely sending these materials to landfills.

Compostable packaging

Compostable packaging is not designed to be recyclable. Many compostable products are plastic and are labelled with a plastic identification code 7, which stands for all other types of plastic. However, consumers may mistake that symbol for a sign that the material is recyclable. Other compostable plastics are fibre-based. Some may have a thin plastic lining. Many have additional chemicals and materials added so that they can hold liquids (eg, coffee cups). This makes them unsuitable for paper recycling. More information on compostable packaging can be found in the section on materials to be excluded from organic waste collections below.

Expanded polystyrene

This is the white packaging that surrounds purchases of electronic goods and whiteware. The packaging is typically large and bulky. When recycled at kerbside, it breaks easily into smaller pieces that can end up in landfills or in stormwater drains or wastewater. A household polystyrene recycling programme is now available at some hardware stores nationwide.[126]

Soft plastic

Plastic film, mainly made from plastic 4 (LDPE) can cause issues at the sorting and processing stage of kerbside recycling. Most recycling is processed along a conveyer belt and in many cases sorted mechanically. Soft plastic easily snags on sorting equipment and gets tangled. This requires the sorting process to stop and staff to physically remove the trapped plastic. There are only three councils collecting soft plastic at kerbside. Currently, there are no export

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125 All estimates in this Appendix of how much packaging households use come from: Yates S. 2019. *Rethinking rubbish and recycling*. Prepared for the WasteMINZ TAO Forum by Sunshine Yates Consulting. Auckland: WasteMINZ.

126 www.expol.co.nz/recycling-programmes/

markets for mixed kerbside soft plastics and only one company in New Zealand, Future Post, receives household soft plastics (for a significant processing fee).

The Soft Plastics Recycling Scheme has proved effective at collecting soft plastics via drop-off points in supermarkets. As Future Post's demand for soft plastics has increased, they have been able to expand collections around the country. However, demand is not yet sufficient to roll-out a nationwide service. In addition, the contamination of recyclable soft plastic with non-recyclable compostable plastics is also increasing and becoming problematic.

Liquid paperboard (LPB)

LPB cartons are made from fibre with an internal layer of plastic and metal. Some also have plastic lids or plastic straws attached on the outside. The average household uses 46 LPB containers per year, of which 41 contain beverages, such as juice or plant-based milks, and 5 contain other liquids such as vegetable stock or flavoured yoghurt. This adds up to 2.5 kilograms of potential recycling per person each year.

LPB cartons are hard to recycle as the container is a composite multilayer material, and these materials are not easily separated for recycling. Only two councils collect this material at kerbside and send it for recycling via a fibre bale.

When processed via a fibre bale, the plastic and aluminium will not be recovered and micro-plastics may enter the wastewater system. For some paper recyclers, the pulping time is too short to process the fibre and the entire carton is sent to the landfill. New Zealand does not have a domestic recycling facility for LPB, although an onshore waste-to-building materials plant for LPB has been proposed.

Alternatively, in a manual system LPB can be removed by hand and sent for offshore recycling. However, a case study in Northern Ireland found the capture rate was only 40 per cent with this process.[127] If LPB is collected via a source-separated collection together with cans and plastic containers, then an optical sort for fibre could be used, which would capture almost 100 per cent. However, facilities that do this type of sorting often need to run this as an additional sort at night, which incurs significant additional costs.

Part 1 proposed that LPB containers for beverages (eg, juice and flavoured milks) be collected through the CRS. Non-beverage LPB (eg, liquid vegetable stock) is already designated a priority product and will be part of the product-stewardship scheme for non-beverage plastic packaging.

Aluminium foil and trays

The average household uses only 1.13 kilograms of aluminium foil and trays per year, of which 85 per cent are placed in the rubbish instead of the recycling. Only 12 councils accept aluminium foil and 21 accept aluminium trays and plates. Collecting foil at kerbside for recycling may increase contamination, particularly from food residue on trays and foil. A national audit found 47 per cent of foil in kerbside rubbish and recycling was dirty or had food residues 7 per cent.[128]

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[127] Schofield S, French W, Cook E. 2017. *Collection of food and drink cartons at the kerbside*. Banbury: WRAP.

[128] Yates S. 2019. *Rethinking rubbish and recycling*. Prepared for the WasteMINZ TAO Forum by Sunshine Yates Consulting. Auckland: WasteMINZ.

Aluminium foil is not always picked up by optical sorters, as it can often be in small pieces. Aluminium trays can be coated in plastic, which acts as a contaminant. Refining aluminium is also energy intensive.

To move to a more circular economy, lower-emission alternatives or reusable products are preferred. When possible, aluminium foil and trays should be cleaned and reused. The low tonnage of aluminium foil received at kerbside means it is included for sale in beverage container bales, where it is regarded as a contaminant and reduces the value of the bales. More information on aluminium recycling can be found in the interim regulatory impact statement.

Aerosols

The average household uses 2.2 kilograms or 14 aerosol cans per year, two-thirds of which are placed in the rubbish instead of the recycling. Currently 38 of 67 councils accept aerosol cans at kerbside. Aerosols can be used for cooking (eg, whipped cream or cooking oil sprays), or for personal hygiene products (eg, deodorants). They can also be used for lubricants, insect repellent sprays and spray paint – all of which may contain substances not safe for human consumption. Aerosols can be a health and safety hazard to recycle, because if the containers are not fully emptied before being put into the recycling, they can be flammable and have been known to cause fires. This is especially true if the recycler does not have the ability to puncture the aerosols.

Aerosol cans can be made from either aluminium or steel. The low tonnage of aerosols received at kerbside means they are included for sale in beverage container bales, where they are treated as a contaminant. There is a market (in India) for aluminium aerosols and this market will likely continue. However, the containers need to be baled separately from aluminium beverage cans, and the separation of different types of cans from aerosols is difficult.

Markets for steel aerosols are not strong overseas or in New Zealand. Steel is less valuable than aluminium, which makes the processing required to separate the non-steel parts of a steel aerosol financially marginal. They would need to be included as part of a scrap-metal bale.

Aerosols can be accepted for recycling by scrap-metal dealers and could also be accepted for recycling at transfer stations or resource recovery centres, where they could be sold as part of a scrap-metal bale or an aluminium-aerosol bale.

Multi-materials including pumps and triggers

Some products are made up of two or more materials, which individually are recyclable, but when glued or pressed together become unrecyclable. In some cases, they are unable to be disassembled. For example, the trigger in a spray bottle is made up of several different types of plastics and cannot be physically or mechanically disassembled.

In other cases, the products rely on the consumer to realise that the packaging needs to be disassembled and then to do so. For example, some PET bottles are covered in plastic sleeves which need to be taken off so that the laser sensor recognises it as a PET bottle. If the sleeve is left on, the sensor identifies it as a non-recyclable plastic, and it is landfilled. Most sleeves are made from PVC film and are being phased out by mid-2025.

We recommend that multi-materials, including pumps and triggers, are excluded from kerbside recycling and, where possible, designed out of products to ensure a higher quality of recycled materials.

Small and oversized items

Items smaller than 55mm at the widest point are unlikely to end up being recycled. On automated sorting lines, a rotating trommel screens out small items at the start of the process and they are sent to the landfill. On manual sort lines, the items are too small to be easily picked out in time.

Several successful community schemes include smaller items. Bread Tags for Wheelchairs collected plastic bread tags for recycling, and Lions Clubs around the country collect metal rip tabs from beer cans and metal lids from wine bottles, which they sell to scrap metal dealers to support their fundraising efforts. These types of schemes are ideally suited to recycling smaller items.

Oversized items larger than 3 litres are too big to be processed on automated sorting lines. Large items are more suitable for being recycled via transfer stations.

Additional information on materials proposed to be excluded from food scraps and garden waste bins

Compostable packaging

Compostable packaging is designed to break down in an aerobic composting process into water, carbon dioxide and biomass over a comparatively short period of time under suitable conditions. It can be made from plants and look similar to cardboard, or it can be made from plants and/or fossil fuels and look similar to plastic. Hybrid packaging with a combination of compostable plastic and fibre is also possible.

We do not recommend that compostable packaging is included in any kerbside collection bin that also diverts either dry recycling, food scraps or garden waste from landfills at this time for the following reasons.

- Composting facilities do not necessarily want compostable packaging. Composters do not need compostable packaging to make quality compost, because it provides no nutrient value. The potential value of compostable packaging lies in its ability to help divert food waste from landfills. Many composting facilities produce high-quality, organically certified compost and are not permitted to accept compostable packaging.
- Compostable packaging contaminates other waste streams. Compostable packaging can look almost identical to non-compostable packaging. One of the cups in figure 15 is made from compostable plastic and the other from recyclable plastic, yet they are almost impossible to tell apart. Compostable packaging can contaminate both dry recycling and organic collections.

- There is a common misconception that compostable packaging is recyclable. In 2021, we conducted a survey that found 49 per cent of respondents believed that compostable packaging could be recycled.[129]
- There is a significant risk of plastics and micro-plastics from non-compostable lookalike plastic packaging entering our soils.
- Sorting and processing of compostable packaging is an issue in New Zealand and globally. No automated process can identify and separate non-compostable packaging from compostable packaging, so the only way to remove contamination completely is to sort by hand.
- Compostable packaging may impact compost quality. While there are international certification standards for compostable packaging, these standards allow for up to 5 per cent of non-compostable material to be included.
- There is no New Zealand standard for compostable packaging.
- Compostable packaging needs to be certified in its final form, because the shape and design of a container can affect whether it meets a standard or not. The cost of certifying a product to meet a standard is upwards of $25,000 per product, so very few products are certified.

Figure 15: Compostable plastic and recyclable plastic cup

Photo: Kim Renshaw

[129] Butt T. 2021. *General public attitudes to composting and compostable packaging – survey report*. Prepared for the Ministry for the Environment by UMR. Wellington: Ministry for the Environment.

The Ministry for the Environment's views on compostable packaging

We have outlined our position on where compostable packaging can play a role in a circular economy and the types of products and packaging that are most suitable for compostable materials. The National Plastics Action Plan[130] also lists actions needed to better understand the impacts of compostable plastics on the soils and food chain and considers the role of overseas standards in New Zealand. Compostable plastic packaging is included under priority product stewardship for plastic packaging, although compostable fibre packaging is not.

Alternative collection options for compostable packaging

Product stewardship schemes for compostable packaging will need to consider how these materials can be collected. They could consider setting up drop-off points, which has worked well for soft plastic recycling. Another option could be a kerbside bin for compostable packaging, which may be easier than trying to distinguish compostable from non-compostable packaging.

Compostable bin liners

Only 3 out of 12 kerbside food scraps collections permit compostable bin liners. In some regions, the local composting facility produces organically certified compost and is not able to accept them. Other councils are trying to avoid contamination from conventional plastic bags, which look similar. Still others are trying to reduce unnecessary single-use materials.

However, unlike compostable packaging, there is an agreed standard for compostable plastic film, and our understanding is that all bags sold in New Zealand meet that standard. Research has shown that the use of a kitchen caddy with a compostable liner increases participation in food scraps collections. Therefore, we are interested in feedback on whether compostable bin liners should be excluded or left to best-practise recommendations.

Tea bags

Many tea bags include plastic fibres to allow heat-sealed edges. Consumer NZ undertook a survey of the major brands[131] and found that 10 companies used plastic 5 and seven used plastic 7 (in this case polylactic acid, or PLA) to seal their teabags. PLA is a plastic which can be certified to breakdown in an industrial composting system. Some companies have already phased out the use of plastic 5 in tea bags. However, few companies have chosen to certify their teabags as compostable.

Some companies state that there are no plastic fibres in bags that are folded and secured with string or a staple, rather than heat-sealed. These are often premium tea bags.

We are keen to understand the tea industry's plans for voluntarily phasing out plastic 5 in tea bags and certifying their tea bags for compostability. If these conditions are met, then tea bags could be considered for acceptance in food scraps bins.

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130 Ministry for the Environment. 2021. *National plastics action plan for Aotearoa New Zealand*. Wellington: Ministry for the Environment.

131 www.consumer.org.nz/articles/plastic-in-tea-bags#article-what-manufacturers-use-to-seal-their-tea-bags

Recyclable paper and cardboard packaging

Some councils accept paper towels, newspapers and pizza boxes in their organic bins. A cautious approach should be taken to accepting these materials without certification for compostability. Chemicals, such as per- and poly-fluoroalkyl substances (PFAS), are used in packaging. These can negatively impact soil quality and can be toxic to human health or bioaccumulate over time.[132] Inks and dyes can also be problematic.

[132] https://chemtrust.org/pfas_eu_packaging/

Appendix 4: Facilities identified to accept household food scraps

The following facilities have capacity and resource consent to accept kerbside collections of household food waste (table 11). Please tell us if you know of any other facilities that should be added to this list.

Table 11: Facilities with resource consent that can accept household food scraps from kerbside collections

Region	Facility
Waikato	Envirofert – Tuakau Hampton Downs – Waikato Mynoke Vermicomposting site – Taupō
Bay of Plenty	Enviro NZ – new facility planned 2023 Ecogas – Reporoa new facility planned 2022
Canterbury	Living Earth – Christchurch Timaru Eco Compost Facility – Timaru

Based on preliminary analysis, the following councils do not provide a household kerbside food scraps collection (although some may be planning to) and are near the facilities above.

North Island: Auckland, Thames Coromandel District Council, Matamata-Piako District Council, South Waikato District Council, Waikato District Council, Waipā District Council and Waitomo District Council

South Island: Mackenzie District Council, Waitaki District Council, Ashburton District Council and Hurunui District Council

Glossary

Note: the terms below are definitions for the purposes of this consultation document, *Transforming Recycling*. They are not legal definitions, and some would need to be reconsidered at the regulation-making stage.

Term	Definition
Anaerobic digestion	The process of breaking down organic material in the absence of oxygen; used to manage waste. The process produces fuel and a fertiliser.
Anaerobic digestion facility	The facility or plant where anaerobic digestion takes place.
Beverage	A beverage (or drink) is a liquid substance that is intended for human consumption by drinking.
Beverage container	A 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.
Circular economy	An economic system based on designing out waste and pollution, reusing products and materials, and regenerating natural systems.
Class 1 (municipal) landfill	Class 1 landfills are New Zealand's most engineered and monitored landfills because they take waste that could discharge contaminants or emissions. All household waste and most commercial, institutional and/or industrial waste is sent to Class 1 landfills.
Comingled recycling	Where different recyclable materials are collected and mingled together in one bin or truck. Comingled recycling requires later sorting to separate the different materials.
Container-to-container recycling	Refers to packaging that is collected and recycled then used to manufacture the same type of packaging to create a circular 'closed-loop' system. Includes 'bottle-to-bottle' recycling.
Container return scheme (CRS)	A resource recovery scheme that incentivises people to return empty beverage containers for recycling or refilling in exchange for a refundable deposit. A CRS is synonymous with a DRS (deposit return scheme (Europe) and container deposit scheme (USA and Australia).
Container return facility (CRF)	Where consumers and businesses can return eligible beverage containers to redeem their container and receive the refund. These are typically retailers (either through an automated reverse vending machine or 'over-the-counter') or larger depots.
Contamination	The wrong, or excessively dirty, material placed in recycling and food scraps collections. Contamination may also occur if the method of collection means one recyclable material cannot be efficiently sorted from another (eg, broken glass contaminating paper and cardboard).
Deposit	The refundable amount of money added to the normal price of a beverage. Consumers receive the deposit back when they return the empty beverage container to a CRS collection point for recycling.
Downcycling	Refers to using recovered materials to make other products that are less recyclable at end-of-life. Downcycling often leads to a less circular, linear, material flow through the system.
Dry recycling	Refers to the collection of common recyclable packaging materials, such as glass, steel, aluminium, some plastics, paper and cardboard.

Term	Definition
Emissions	Greenhouse gas emissions, especially carbon dioxide and methane, released into the atmosphere, where they trap heat or radiation. Most waste-related emissions are biogenic methane emissions, generated when organic materials, such as food scraps, paper, wood and sewage sludge, break down in the absence of oxygen.
End-of-life	The end of a product's useful life (eg, when it is unable to be repaired or reused).
Food scraps	Includes edible and inedible discarded scraps from food and food preparation. For example, onion skins, peel, meat and bones, half eaten, mouldy or expired food. 'Food scraps collections' refers to the collection of food scraps from a dedicated bin alongside kerbside rubbish and recycling collections.
Garden waste and green waste	Excess plant material from garden activities. For example, lawn clippings, vegetable garden waste, and flower and shrub trimmings (generally does not include larger woody material requiring a saw).
Hard-to-recycle	Materials or packaging products with limited markets for recycling and/or that are technically difficult to recycle. Where recycling is possible, they represent low economic value for recycling purposes.
Inorganic recyclable materials	Materials collected for recycling that are not of biological origin, such as glass, plastic and aluminium.
Interim regulatory impact statement	Initial analysis by the Ministry for the Environment of the options being consulted on. It includes a consideration of the costs and benefits of a proposal as well as its impact on different stakeholders. A final regulatory impact statement, informed by the consultation, will accompany final policy proposals.
Kerbside collections	Collections of rubbish, recycling, food scraps or another specified material placed at the edge of the footpath (side of the kerb) for collection.
Kerbside recycling	Recycling placed at the kerbside for collection. Household kerbside recycling refers to recycling from households, which is often a council-provided service.
Linear economy	Our current single-use or 'one-way' economic system of taking resources, making products and disposing of them.
Liquid paperboard (LPB)	LPB cartons are a composite, multilayer material made from a combination of fibre (cardboard), plastic and aluminium. These materials are not easily separated for recycling.
Materials recovery facilities (MRF)	Facilities where recycling is sorted into saleable commodities. Most recycling collected at kerbside will be sent to an MRF to be sorted before being on-sold to be recycled into new materials and products.
NZ CRS	New Zealand Container Return Scheme.
Organic waste	Waste made from materials of biological origin including food scraps, garden waste, paper, timber, plant-based fabrics, and sewerage sludge.
Organics recycling / organic waste collections	The collection of food and/or garden waste for recycling (processing back into a useful resource eg compost). Organics recycling may be used in place of terms such as 'wet recycling' or 'food scraps collections'. Although paper, cardboard, timber and plant-based fabrics are also organic waste, they are not the target of 'organics recycling' or 'organic waste collections'.
On-the-go	Refers to the 'on-the-go' or 'away from home' consumption and/or disposal of products (and their packaging) outside of the household, such as in public places and commercial establishments (eg, cafes, restaurants, bars).

Term	Definition
Producers	The manufacturers, brand owners and importers of a product.
Product stewardship	When people and businesses take responsibility for the life-cycle impacts of products, either voluntarily or in response to regulations.
Product stewardship schemes	An accredited voluntary or regulated scheme in accordance with Part 2 of the Waste Minimisation Act 2008. Refer to the Act and the Ministry's website for detail on regulated and voluntary product stewardship schemes.
Recovery	Refers to both the extraction of materials or energy from waste or diverted material (or 'recovered materials') for further reuse or reprocessing, includes making waste or diverted material into compost.
Recovery rate	The proportion of materials recovered (or captured or diverted) from the waste stream for recycling or reuse. See also 'return rate'.
Recyclable	Existing collection, sorting and reprocessing systems with end-markets in place. Reasons that packaging may be unrecyclable include size, shape, colour and the materials used.
Recycling	The reprocessing of unwanted or used materials to produce new materials. May also refer to a noun, for example, 'putting your recycling out'.
Recycling stream	Materials collected for recycling (as opposed to materials sent to landfill).
Return rate	The rate of eligible beverage containers that are returned and recovered specifically through a container return scheme.
Reusable and refillable beverage containers	Beverage containers that are intended for multi-use and refilling and have an established return and refillables scheme.
Single-use beverage containers	Beverage containers designed for the purpose of casing a beverage product for one use only, that is, not designed for refilling with the product.
Soil amendment products	Products for improving soil structure or fertility, such as compost and digestate produced by composting and anaerobic digestion of organic materials.
The Ministry	Ministry for the Environment.
Waste Advisory Board	Established under Part 7 of the Waste Minimisation Act 2008 and provides independent advice to the Minister for the Environment on matters relating to the Waste Minimisation Act 2008 and waste minimisation.
Waste hierarchy	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.
Waste Minimisation Act 2008 (WMA)	The Act encourages a reduction in the amount of waste generated and disposed of in New Zealand.