

Recycling Leadership Forum

Term 1 Progress Report and Recommendations

May 2025



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Please note this report represents the work and views of the Recycling Leadership Forum and should not be considered Ministry for Environment positions

Purpose

This report updates the Ministry for the Environment (the Ministry) on improving recyclability outcomes for key materials excluded from kerbside recycling collections. The report is informed by the Recycling Leadership Forum's work programme, and makes recommendations on key materials and system improvements.

Background

In September 2023 the Minister for the Environment published the gazette notice [Standard Materials for Kerbside Collections Notice 2023 \(Notice No 1\)](#), which required that from 1 February 2024, all territorial authority-managed household kerbside recycling, food scrap and food and garden services must accept only a standard set of materials.

Materials accepted in kerbside recycling services are:

- glass bottles and jars
- paper and cardboard
- bottles, trays, and containers made from plastics 1, 2 and 5
- aluminium and steel tins and cans.

To comply, some councils had to either stop collecting certain items, or start collecting new ones, to align with the standard list of materials.

Key reasons for standardising the list of accepted materials included:

- that the materials can be collected and processed safely and effectively across New Zealand's material recovery facilities
- the risk of the materials contaminating recycling
- access to end markets, and role in supporting a circular economy
- national consistency and the need to rebuild the public's trust and confidence.

There is a tension between ensuring materials collected are suitable for New Zealand's resource recovery infrastructure, and the technical packaging challenges experienced by brand owners and packaging manufacturers.

While not all materials are suitable for kerbside collection right now, changes to infrastructure and markets may mean other materials can be accepted at kerbside in the future. The Minister for the Environment is responsible for updating the list of standard materials, and a standard materials review process is outlined in the [guidance document](#)¹ for the standard materials changes.

¹ Ministry for the Environment. 2023. [Standard materials for kerbside collections: Guidance](#). Wellington: Ministry for the Environment.

Functions of the Recycling Leadership Forum

The Recycling Leadership Forum (RLF) was established in May 2024. It provides expert advice and information to the Ministry on improving the recyclability and recovery of packaging materials in New Zealand's resource recovery system.

The RLF includes brand owners and representatives from the retail, packaging, food and grocery manufacturers, recycling, and local government sectors. It provides a platform for sharing understanding across the supply chain of the barriers and opportunities for recovering more materials for recycling.

The RLF focuses on understanding how to improve recyclability for key materials explicitly excluded from kerbside recycling collections from 1 February 2024.

The RLF is largely considering:

- the best way for New Zealand households to return specific packaging items/materials for beneficial reuse/recycling
- how to get the most out of kerbside recycling systems and complementary collection or drop-off systems and associated resource recovery networks.

The RLF's first focus is on quick wins, tactical changes and improvements, and what is needed to make sure these work. The group has been looking at what is needed to accept or exclude specific items or materials in kerbside, including options like investment, resource recovery, public trust and financial impacts.

The RLF met every six to eight weeks, either online or in person. There have also been eight half-day meetings during the term, and sub-group meetings for priority materials were held between the forum meetings. Online meetings have also been held on specific topics as needed, to help progress this work. RLF members are leaders and professionals in their fields, and have done this work on a voluntary basis.

Why kerbside matters

Kerbside collections are the main way households divert waste from landfills, returning resources to the economy and reducing climate emissions. Providing consumers with both easy-to-use systems and clear information about product recyclability, helps improve the quality and quantity of materials collected for recycling. This ultimately reduces the amount of waste sent to landfill, and the associated costs and emissions.

Kerbside has some limitations, and further steps towards a circular economy are needed, through the introduction of more upgraded and purpose-built recovery and reuse depots (that is, for plastic packaging, beverage containers, and e-waste). The UK household recycling rate (where the system is largely kerbside based) has remained stagnant over the last decade. In 2022, it was 44.6 percent,² but 43.9 percent in 2012.³ The UK addressing this with "[simpler recycling](#)" regulations

² <https://www.gov.uk/government/statistics/uk-waste-data/uk-statistics-on-waste>

³ Department for Environment Food & Rural Affairs. 2014. [UK Statistics on Waste – 2010 to 2012](#). York: Department for Environment Food & Rural Affairs.

for household collections from 31 March 2026, which will include aerosols, lids and caps and soft plastics.⁴

While kerbside collections are efficient, and are a common collection mechanism in New Zealand, contamination from non-recyclable material and general waste in kerbside recycling is a significant problem. The more waste there is in kerbside recycling, the more expensive it is to dispose of waste at the end. Waste that ends up at material recovery facilities (MRFs), or recycling facilities, ultimately ends up at a landfill, so the extra handling and transport costs can be significant. This is often a hidden cost, but one paid for by either council ratepayers (indirectly), or inflated gate or processing fees.

Consumer education and behaviour change

People do what is easy, so it is key we make recycling correctly as easy as possible.⁵ The Ministry's Behavioural Trend Monitoring 2025 will ask a nationally representative sample of New Zealanders 'at what stage do you check whether an item can be recycled?', to gain insight into whether it is at point of purchase, disposal, or never. Once insights from this research are published later in 2025, these can shape the RLF's future work on consumer education.

Reliable on-pack labelling is essential, and starts with establishing what is recyclable in New Zealand. Consumer education and behaviour change are linked to RLF's role with the Australasian Recycling Label.

The RLF can draw on New Zealand-based research and education campaigns as well as overseas models like the Australian Recycle Mate. Changing behaviour takes sustained effort, and any changes to kerbside-accepted materials will need a supporting behaviour change programme to be successful. Evidence to date from MRF operators is that lids and caps are still prevalent in the recycling stream, despite no longer being accepted materials. Similarly, issues with batteries entering the waste and recycling streams highlight the need for active behaviour change programmes.

As mentioned earlier, rubbish and non-recyclable items often end up in kerbside recycling across New Zealand, causing contamination. This creates extra costs through re-transportation, landfill fees, and damage to MRF equipment. The lost system capacity is also significant. This is an important issue that needs more attention as part of the recycling road map.

Work summary and recommendations

Work programme: outcomes

The RLF's work programme for 2024/25 included the following outcomes:

⁴ [The Separation of Waste \(England\) Regulations 2024. https://www.legislation.gov.uk/ukxi/2024/666/schedule/1/made](https://www.legislation.gov.uk/ukxi/2024/666/schedule/1/made)

⁵ Ministry for the Environment. 2023. [*Best practice communications for waste minimisation: A guide to support effective behaviour change within households*](#). Wellington: Ministry for the Environment.

- Cross-sector recommendations on how different materials (mainly packaging) are best collected for recycling, including where non-recycling options are preferred; for example, avoided, redesign, or reuse.
- Cross-sector recommendations on improvements to existing systems to increase clarity and ease of use, or the quantity, quality and value of collected recycling. This includes issues such as on-pack labelling, material thresholds for recyclability, clarifying materials and categories of materials; for example, when is a lid not a lid.
- Confidence across the sectors to invest in recyclability solutions. Solutions are announced well in advance, and are enduring (avoiding sudden and unexpected changes in the primary method of collection).

Priority materials focus areas

The RLF identified the focus areas:

- aerosols
- lids and caps
- secondary materials thresholds for fibre
- liquid paperboard
- soft plastics
- plant pots
- aluminium foil/trays.

Three focus areas were to be progressed initially. Priority materials for term one included aerosols, lids and caps, and secondary materials thresholds for fibre. Subgroups were formed that included experts from beyond the RLF, drawing on the expertise and perspective of the wider sector.

Priority product reports for aerosols, lids and caps, and secondary materials thresholds for fibre are summarised below, with full reports in the Appendices.

Soft plastics trial

Government restrictions on kerbside collections mean soft plastics cannot be placed in council kerbside recycling bins. Nelson City Council agreed to work with the scheme to design a household collection service for soft plastics. The following decisions were made to allow a trial to take place:

- soft plastics are collected in an orange bag, which the householder could place in the "glass" crate on alternate weeks to glass collection
- orange bags from participating households were collected by a separate collection truck, and the soft plastic baled by the collector alongside retail collections
- communication materials were developed for the scheme, indicating it is an industry-funded trial, with additional costs covered by the scheme.

The scheme would like to extend the current trial collection of soft plastics and test using the council kerbside collection system (trucks and MRFs) to ensure efficiencies of collection and costs. This is consistent with trials in the UK and Australia, and is reflected in the regulatory framework for simpler recycling in the UK. This is also supported by 98 percent of those participating in the Nelson trial.

We recommend councils should be able to work with the scheme to be permitted to conduct trials of soft plastic in the kerbside collection process.

The RLF supports having a process for this included in the kerbside trials regulations, and looks forward to updates from the Ministry.

Safe battery recycling

Currently, batteries are not included in the RLF's Terms of Reference, and the forum would not support introducing batteries into kerbside collections. A recurring theme at all RLF-held meetings however was the link between fires and batteries (particularly lithium-ion batteries). The safety of people working in the waste industry, collection trucks, and at MRFs, metal recyclers and other recycling facilities, must be central to decision-making when considering recycling schemes.

The RLF agreed that this issue was serious enough to raise with the Minister as a specific matter, ahead of delivering this report.

The WasteMINZ Battery Collection Working Group informed the RLF in May 2025 that they are working on a battery sector review of the status of small batteries in New Zealand. The scope includes a series of workshops with primary stakeholders, stakeholder mapping, key challenges, and a review of the battery life cycle, as well as Fire and Emergency New Zealand (FENZ) data and recommendations.

The RLF supports this work, and agreed this project addresses their concerns to the Minister. The RLF will provide a review for WasteMINZ, and form a subgroup to work with WasteMINZ on any quick wins.

Australasian Recycling Label

To recycle well, reliable packaging labelling is critical. The Australasian Recycling Label (ARL) is an on-pack labelling scheme that helps consumers recycle correctly, and supports brand owners and packaging manufacturers to design packaging that is recyclable at the end of its life. The ARL is an evidence-based programme developed by the Australasian Covenant Packaging Organisation (APCO), with Planet Ark and PREP Design. The ARL aims to provide clear and simple instructions about how to recycle the separable packaging components.

The Ministry supports the ARL as the preferred labelling option in New Zealand.

In February 2025 stakeholders across the packaging and recycling supply chain recommended the RLF lead and coordinate input on how the ARL works in New Zealand. The RLF gives a broad set of sectors and stakeholders the opportunity to help with this work, making it easier to address challenges in applying the ARL in New Zealand.

Investigating how ARL can best work for New Zealand, and governance arrangements and engagement, has been a key work focus in 2025. Because this work is in its early stages, we cannot give a full update at this time.

In the meantime, APCO's ARL programme manager is working with the RLF to finalise the assessment process for New Zealand.

Future roadmap

This first term of the forum has focused on scoping and prioritising work. The RLF will develop and publish a roadmap for materials and recycling system issues they will consider. Priority material reports are a useful starting point, and will give direction for each workstream; these are outlined in the Appendices to this report.

The forum will continue to build on this work, and will map cost-effective ways to put it in place, making sure it is in line with other work in the sector. Improvements to the recyclability and recovery of packaging materials should address system issues and provide connected solutions that work for New Zealand. System consistency and reliability is important for public and private sector investment decisions, and consumer trust and confidence.

Key recommendations on priority materials

Lids and caps

This workstream was created to review options for the effective recovery and recycling of lids and caps in New Zealand. Internationally, lids and caps are predominantly part of kerbside collections. This subgroup reviewed the following options:

1. **Landfill** – This would require no change, as consumers are currently advised to place all lids and caps (regardless of size or material) into general waste. This option would require education, monitoring and enforcement.
2. Find an alternative to effectively recover lids and caps for reprocessing:
 - **Kerbside recycling** – Reintroducing lids and caps into kerbside recycling would require different solutions based on the size, style and material type. The group explored loose and reattached, as well as bag-in-bin options.
 - **Product design** – Seeking changes to product design to better ways to capture lids and caps (for example, tethering caps on plastic beverage containers, improved tethering for aluminium pull tabs, tethering of ice cream container lids). Note that tethering is not a likely solution for steel and aluminium bottle caps.
 - **Voluntary product stewardship** – voluntary take-back scheme for producers and consumers (for example, lids and caps programme organised by the Packaging Forum).
 - **Mandatory product stewardship** – mandatory implementation of take-back scheme for producers.

The subgroup estimates that 5,000 to 20,000 tonnes⁶ of plastic and metal lids and caps end up in landfills throughout New Zealand each year. While this is not a large volume compared to the

⁶ We have based the estimate on the following: Plastics New Zealand. 2023. [Good Caps Report](#). Auckland: Plastics NZ. And Valpak Limited. 2023. [Research to Support the Co-design of a Plastic Packaging Product Stewardship Scheme for New Zealand](#). Stratford-upon-Avon: Valpak Limited. The latter states there are nearly 9500 tonnes of plastic caps and closures so there could be between 5000-20,000 tonnes per annum. Refer Appendix 1.4).

3.6 million tonnes of waste disposed of in Class 1 landfills in 2023/24, this could be saved from landfill, and is an opportunity to educate communities on recycling.

The subgroup considers that for lids and caps to be effectively recycled at scale in New Zealand and build consumer confidence in recycling, lids and caps be accepted back into kerbside recycling:

1. We undertake a national public education campaign focused on behaviour change to teach households and commercial enterprises to place lids and caps back on empty, clean and dry containers.
2. The government make funds available via the Waste Minimisation Fund (“WMF”) to plastics reprocessors for additional equipment and/or infrastructure to safely and effectively process lids and caps materials so as to more effectively sub-sort PET, HDPE and PP. We consider that lids and caps should still be reintroduced to kerbside recycling even where government funding is not available as it will allow for simple, and easy to understand consumer recycling messaging and education in New Zealand.
3. To capture loose lids and caps, the government makes funds available via the WMF to fund material recycling facility (“MRF”) operators with additional equipment and infrastructure (e.g. an additional line) to safely and effectively process lid and caps materials. There could be opportunity to optimise the set-up of MRFs in a more standardised way to ensure maximum recovery without introducing higher contamination rates. We consider that lids and caps should still be reintroduced to kerbside recycling even where government funding is not available as it will allow for simple, and easy to understand consumer recycling messaging and education in New Zealand.

Government funding via the WMF is recommended as it’s acknowledged that the recovery of lids and caps as separate material streams is not commercially viable without government funding in the first instance (i.e. the volume of material doesn’t justify the investment for the current reprocessing values).

If government funding via the WMF (or similar) is not available, the subgroup recommends that lids and caps be reintroduced into kerbside recycling, on the proviso that simple, and easy to understand consumer recycling messaging and education in New Zealand is undertaken. We understand that while ideally MRF operators and plastics reprocessors would prefer more optimal sorting, lids and caps are still present in our recycling streams and don’t pose a significant problem to their operations. Secondary material thresholds for complex fibre

Secondary Material Thresholds for Complex Fibre Thresholds

This workstream is focused on coated paper packaging, also known as composite paper packaging or complex fibre packaging. This is a fibre packaging coated with a polymer coating, or two fibre layers laminated together with a polymer.

The workstream looked at what percentage of secondary materials could be used with fibre and still be considered recyclable. Since 2023 composite fibre containing any percentage of plastic must be labelled “not recyclable” under the ARL. Liquid paper board is excluded, but cups for beverages, ice cream, or noodles are included.

Summary of current situation

- MRF operators are seeking higher standards for waste value, considering a 98% threshold.
- Australia currently operates at an 85% single-sided rate, while Europe operates at 95% (PPWR).
- Imported products are being introduced with recyclable labels.
- The current collection system in place is commingled, and changing it would incur costs.
- The government may need to evaluate whether implementing a 98% threshold in New Zealand, as compared to 95% or 85% in other regions, could be viewed as a protectionist measure that benefits New Zealand MRFs or paper recyclers.

The group considered the following in making their recommendations:

- Why are coated papers being used? What is their purpose?
- How much is placed on the market and where is it coming from?
- What are the global specifications for paper bales?
- How are global market specifications for bales being interpreted for setting a threshold for individual units of packaging?
- What do the results of the paper bale audit conducted as part of the research tell us?
- What is the potential market size for these materials?

The group reviewed the following options:

1. Alignment with Australia – single- and double-sided laminated coated paperboard.
2. Adopt minimum of 95 percent by weight – that is, if its polymer coated with up to 5 percent plastic then it is classed as recyclable.
3. Between 85 and 95 percent, the product must meet agreed pulpability standards (for example, Confederation of European Paper Industries (CEPI))
4. Zero tolerance – 100 percent fibre.

After careful consideration, the group proposes a staged approach.

Stage 1: Over 95 percent fibre single sided coatings are accepted as recyclable and reintegrated back into the ARL PREP assessment tool. This aligns with Europe's PPWR and the UK where 95 percent is considered recyclable as well as Australia. This would include an estimated 4000 tonne of coated fibre packaging.

Segment	NZ made	Aus made	Asia/Europe	95% + fibre
Corrugated liners	1,500T	500T	0	
Flexibles – locally packed	1,000T	800T	200T	Butter wrap, yoghurt lids, powdered sauce /soups; Photocopy wrap paper

Risk mitigation

- Contact paper mill buyers in SE Asia to confirm acceptance. Work is underway to complete this process.
- Conduct mixed fibre bale audit annually to monitor volumes.

Stage 2: Agree pulpability testing protocols; for example, CEPI protocol for single-sided coated fibre over 85 percent and under 95 percent by weight. This will need further research into the pulpability capability of the paper mills in Malaysia and elsewhere that are used by New Zealand paper recyclers.

Stage 1 and 2 do not need to happen together. Stage 2 can only happen when there is evidence that the Southeast Asian mills will accept this standard, although they quite possibly will. Australian standards are based on domestic processors' criteria, for example, Opal and Visy. Currently New Zealand does not have any domestic processing capacity.

No funding is required to support this recommendation.

Aerosols

This workstream was tasked with looking at the challenges of aerosol packaging collection and recovery. The goal of this workstream is to ensure resource recovery is maximised; while also making sure the health and safety of plant, equipment, and people are protected to an appropriate level. Solid progress has been made in this area, but more work is needed.

An estimated 25.7 million household and personal-care aerosols are used in New Zealand each year, without any clear guidance on appropriate disposal. Of these, 16.6 million aerosols are from personal care, household and food products, and 9.1 million are from other categories, including DIY, paint and automotive sector. Aluminium aerosols represent 64 percent of the volume.

Table 1: Aerosols by material and product

Aerosols	Aluminium	Steel	Total
Personal care products	9,405,000	95,000	9,500,000
Household products incl. insect sprays	235,000	4,465,000	4,700,000
Food products	720,000	1,680,000	2,400,000
Total	10,360,000	6,240,000	16,600,000

In comparison, the container return scheme (CRS) design working group project⁷ estimated 514,951,000 aluminium beverage cans (weighing on average 16 grams) are used in New Zealand annually. This means aluminium aerosols represent up to 5 percent of the household aluminium can market. Over 2 billion steel cans are consumed annually in New Zealand. Research by Valpak as part of The Packaging Forum's mass balance assessment in 2024 estimated that 12,995 tonnes of steel cans are consumed in the grocery, non-grocery, back-of-store and hospitality sectors. This means aerosols represent up to 3 percent of the steel can market.

Aerosols will continue to be used, as they cannot be substituted. In New Zealand aerosols aren't accepted in kerbside recycling as they are in the UK, Europe, Canada and Australia. This means the risk has shifted from recycling collectors to waste collectors, metal recyclers, or drop-off systems, and there are increased volumes now in refuse collections. The resource recovery sector still

⁷ Appendix I: Assumptions for deriving single-use container volumes and weight, of NZCRS. 2020. [The New Zealand Container Return Scheme Design – Appendices](#). NZ CRS Project Team for the Ministry for the Environment.

manages aerosols in recycling systems, though volumes have decreased due to kerbside standardisation.

Another important issue are small gas canisters. These can come in aerosol form, but are largely found in small steel containers. They are typically not aerosols but do cause fires in steel balers.

The group considered the following in making their recommendations:

- Is it possible to mitigate the risk at point of collection – is the risk from collection in a recycling truck any different from the risk in the rubbish truck?
- Is it possible to mitigate the risk at the sorting plant?
- How much would it cost to upgrade infrastructure?
- What are commercial barriers – what is the impact of the lower value of aerosols?
- Is insurance a factor, and what can be done about it?
- What are we asking consumers to do with their used household aerosols?

The group asked for information from seven companies, representing 21 MRFs, who service 77 percent of the population, to help understand the current safety systems and where new infrastructure and systems would be needed to mitigate risk.

Only one of the seven recycling organisations responding to the survey expressed concern about lost commercial value. The other six did not expect the price of used beverage container bale (UBC) (the main category of aluminium scrap MRFs sell) to be impacted, or considered it only a possibility. The pricing for bales from overseas buyers through the Association of Metal Recyclers also supported this. Based on the available data, the financial impact would be around 1 percent for aluminium, and there is no differential pricing for steel bales with or without aerosols.

The group has collated information from members of EXPRA and the UK association Alupro to understand how aerosols are safely collected in other countries. Where kerbside collection systems are in place, the rationale is using dilution to deliver the solution.

The following options are under consideration.

1. Reintroducing empty non-hazardous⁸ aerosols into kerbside, and defining safe systems for collection and sorting.
2. Reintroducing only empty non-hazardous household and personal care aerosols into kerbside, and defining safe systems for collection and sorting.
3. Do nothing/status quo – aerosols are collected in household rubbish and sent to landfill.
4. Take back through a different system (to be determined).

The group prefers partly including aerosols back in kerbside collections (option 2). This would include only personal-care aerosols, and aerosols found in the kitchen (that is, spray oils and cream, but not those with caustic or carcinogenic qualities such as oven cleaners). Guidance from consumer research in the UK is to identify aerosols by product groups e.g. hair spray, deodorants, spray cans to present a clear picture for consumers.

⁸ Excluding those marked “poison”.

The group has commenced work to determine if option 4 is feasible, or effective as an option. It is likely that there will be two pathways required – for empty household aerosols which are not deemed to be hazardous and for hazardous aerosols and associated products e.g. gas canisters which may look like aerosols. Potential take back systems under investigation include transfer stations, hazardous chemical sites, community recycling, metal recyclers, commercial collectors.

Risks raised by MRF operators will need to be addressed in a practical way, and are likely to focus on:

- baling operation
- air quality (that is, volatile organic compounds (VOCs))
- combustibility of products (that is, some aerosols are more combustible than others).

Only certain types of aerosols can be included, so recommendations are likely to also suggest an education programme. This would be supported by a user-friendly tool like Recycle Mate (widely used across Australia) to help people understand which aerosols can and cannot be recycled. Overseas guidance is also to conduct trials of the preferred pathway(s) prior to national integration.

The costs and timeframes for delivering this option will need to be evaluated as a next step.

Opportunities to build on Year 1 work

Changes to recycling systems should be well thought through, with clear reasons for priorities, including where to invest in equipment or facilities. The RLF has made a good start, especially with the work in the priority material reports, but there is more to do. Launching a fit-for-purpose ARL for New Zealand is important, to ensure products are clearly labelled and decisions reflect our local system.

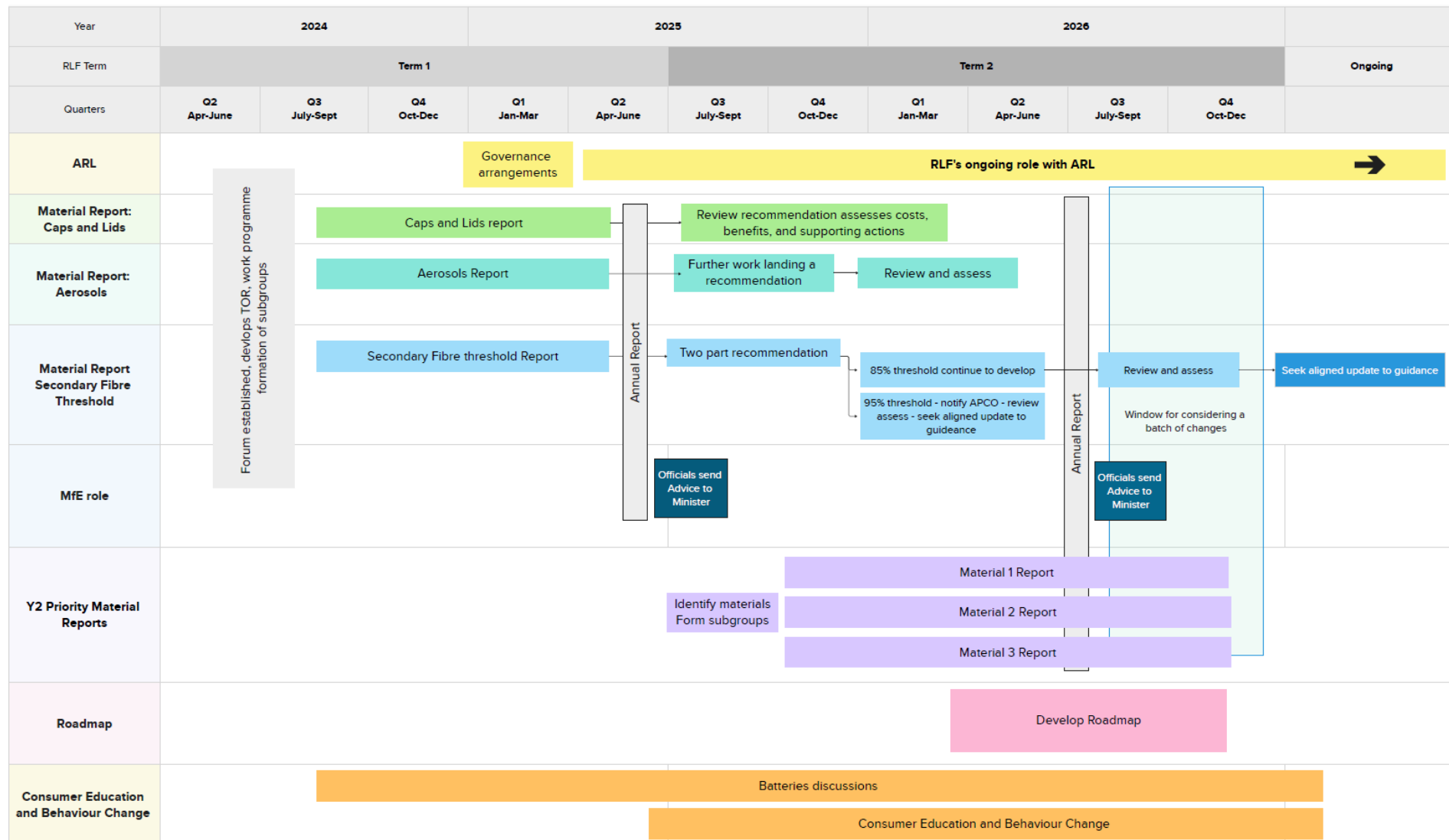
A proposed work programme is outlined in Table 2.

RLF members are keen to continue this work. A systems approach is key, with different parts of the sector able to work together on practical solutions for a New Zealand context.

Summary of recommendations

Material	Recommendation
Lids and caps	1. A national public education campaign, focused on behaviour change to teach households and businesses to place lids and caps back on empty, clean and dry containers. 2. The government provides funding to plastics reproprocessors through the Waste Minimisation Fund (WMF) for extra equipment or infrastructure to safely and effectively process lids and caps materials, to better sort PET, HDPE and PP. 3. Material recycling facilities (MRFs) improve and standardise their set-up (magnets and eddy currents) to recover as many lids and caps as possible, especially of high-value metals such as aluminium caps. The government would need to provide funding from the WMF to support MRF operators to establish an additional line, at a cost \$1 million per MRF.
Secondary material thresholds for complex fibre	The group proposes further work involving a staged approach to resolving this issue: • Stage 1: Over 95 percent fibre single-sided coatings are accepted as recyclable and reintegrated back into PREP tool immediately. Risk mitigation to conduct mixed-fibre bale audit annually to monitor volumes. • Stage 2: Agree pulpability testing protocols, for example, CEPI protocol for single-sided coated fibre over 85 percent and under 95 percent by weight. This will need further research into the pulpability capability of paper mills in Malaysia and elsewhere used by the New Zealand paper recyclers. No funding is required to support further work at this time.
Aerosols	There is more work necessary to formulate a position but while the work continues, the subgroup considers a partial inclusion of aerosols back in kerbside collections is the proffered option.

Table 2: RLF timeline and work programme



Acknowledgements

The Recycling Leadership Forum acknowledges its members, who volunteer their time and expertise to support the RLF in improving the recyclability and recovery of packaging materials in New Zealand's resource recovery system. Of note is the considerable work by the Priority Materials Subgroup members, which have informed this report. The RLF also acknowledges the support of organisations and businesses that have contributed information and resources to the subgroups' work. The RLF expresses its appreciation for the professional support from the Ministry for the Environment's Recycling Leadership Forum secretariat and officials.

Recycling leadership members

Raewyn Bleakley (CE, Food and Grocery Council), Cameron Scott (Vice Chair, Food and Grocery Council) and Lyn Mayes (Mad World) (who stood in as Cameron's replacement), Sandy Botterill (Head of Environmental Social Governance, Foodstuffs), Ann-Marie Johnson (Manager, Advocacy, Advice & Communications, Retail New Zealand), Alec McNeil (Manager Resource Recovery, Christchurch City Council), Parul Sood (Deputy Director Resilience and Infrastructure, Auckland Council), Harry Burkhardt (President, Packaging New Zealand), Rob Langford (CEO, The Packaging Forum) and Debra Goulding (who stood in Rob's replacement) (Board member, The Packaging Forum), Daniel Yallop (NZ Business Development Manager, Re.Group), Chris Lobb (General Manager Special Projects, Enviro NZ), and the RLF Chair, Rachel Reese (Rachel Reese Consulting)

Subgroup on Lids and Caps

RLF Representatives: Sandy Botterill (Chair), Debra Goulding, Chris Lobb, Daniel Yallop

Supported by: Clarke Truscott (Head of Innovation, Sustainability, Strategic Projects & Container Return Schemes Coca-Cola Europacific Partners New Zealand), Steve Mead (General Manager NZ Pact Recycling)

Subgroup on Secondary Material Thresholds for Fibre

RLF Representatives: Raewyn Bleakley (Chair), Daniel Yallop, Chris Lobb, Debra Goulding.

Supported by: Lyn Mayes, NZFGC; Shaun Lewis, Ministry for the Environment; Liz Butcher, Ministry for the Environment; Harry Livesey, Ministry for the Environment; Brent Devlin, Stratex; Christopher Jury, Goodman Fielder; Andrew Whitson, Sanitarium; Anneliese Syder, APCO; Marlene Cronje-Vermeulen, APCO; Alex Turner, APCO; Genevieve Renall, Arataki Honey; Matthew Hitchings, Fullcircle/OJI; Terri Smith, Opal NZ; Sean Somerville, OJI Fibre; Rob Wilson, Ecocentral.

Subgroup on Aerosols

RLF Representatives: Raewyn Bleakley (Chair), Alec McNeil, Daniel Yallop, Chris Lobb, Debra Goulding.

Supported by: Lyn Mayes, NZFGC; Shaun Lewis, Ministry for the Environment; Sean Somerville, OJI Fibre; Phil Fleming, Association of Aerosols ANZ; John Dempsey, Unilever; Korina Kirk, Association of Metal Recyclers; Yuri Schokking, Smart Environmental; Natasha Hickmott, Palmerston North City Council; Nick Baker, Visy Glass.

Appendix 1: Focus material report – lids and caps

Summary

Since February 2024 lids and caps are no longer accepted in kerbside recycling, despite being recyclable. This is because lids and caps are typically small and or thin (less than 5 cm in any direction), are too small to handsort or fall through the sorting lines in the current infrastructure, meaning they will end up in general waste.

The Recycling Leadership Forum (RLF) was established by the Ministry for the Environment in May 2024. It provides expert advice and information to the Ministry on improving the recyclability and recovery of packaging materials in New Zealand’s resource recovery system, with an initial focus on materials that have been excluded from kerbside collection.

An RLF working subgroup was created to review options for the effective recovery and recycling of lids and caps. This subgroup reviewed the following options:

1. **Landfill** – no change required, as consumers are currently advised to place all lids and caps (regardless of size or material) into general waste. This option would require education, monitoring and enforcement.
2. **Find an alternative to effectively recover lids and caps for reprocessing:**
 - **Kerbside recycling** – reintroducing lids and caps into kerbside recycling; the group explored loose and reattached, as well as bag-in-bin options.
 - **Product design** – seeking changes to product design to better capture lids and caps (for example, tethering caps on plastic beverage containers, improved tethering for aluminium pull tabs, tethering of ice cream container lids). Tethering is not likely to be a solution for steel and aluminium bottle caps.
 - **Voluntary product stewardship** – voluntary take-back scheme for producers and consumers (for example, lids and caps programme organised by the Packaging Forum).
 - **Mandatory product stewardship** – mandatory implementation of take-back scheme for producers.

While all lids and caps are small, there are many variations in material make-up, shape and size. This makes it difficult to have a “one size fits all” approach to lids and caps for effective recovery and reprocessing.

The subgroup estimates that between 5000 to 20,000 tonnes⁹ of plastic and metal lids and caps end up in landfills throughout New Zealand each year. While this is not large volume compared to the 3.6 million tonnes of waste disposed of in Class 1 landfills in 2023/24, it could be saved from landfill, and is an opportunity to provide simple and easy to understand consumer recycling messaging and education.

⁹ We have based the estimate on the following: Plastics New Zealand. 2023. [Good Caps Report](#). Auckland: Plastics NZ; and Valpak Limited. 2023. [Research to Support the Co-design of a Plastic Packaging Product Stewardship Scheme for New Zealand](#). Stratford-upon-Avon: Valpak Limited. The latter states there is nearly 9500 tonnes of plastic caps and closures (see Appendix 1.4).

Table A1.1: Lid and cap materials, sizes and usage

	Material	Sizes	MRF capability (if loose)	Scrap value @ Feb/Mar 2025	Tonnage POM (Est)*
Plastic lids and caps	Polyethylene terephthalate (PET) #1 eg, flat or 3D dome drink lids	Between 8.5 x 1 cm and 8.5 x 5 cm	Yes, where 5 cm or larger	\$0 p/tonne - colour \$220 p/tonne - clear	<100 tonnes
	Low density polyethylene (LDPE) #4	Approx 3 x 1 cm	No	\$0 p/tonne	<50 tonnes
	High density polyethylene (HDPE) #2 eg, milk, soft drinks, spreads	Between 3 x 1 cm and 9 x 1 cm	No	\$250 p/tonne - colour \$650 p/tonne - clear	1220 tonnes
	Polypropylene (PP) #5 eg, yoghurt/dairy, ice cream, spreads	Between 12 x 1 cm and 18 x 1 cm	No	\$150 p/tonne	229 tonnes
Metal lids and caps	Steel eg, jar/can lids, beer caps	Between 3 x 1 cm and 7 x 1 mm	Yes - magnets	\$240 p/tonne	1955 tonnes
	Aluminium eg, wine caps	Between 3 x 2 cm	Yes – eddy current	\$2650 p/tonne	920 tonnes
Initial recommendation <i>Plastic lids and caps:</i> Reattach to clean, empty container. Potential upgrade to plastic reprocessors to more effectively sub-sort. <i>Metal lids and caps:</i> Loose in kerbside. Upgrade or reconfigure steel magnets to seek more material i.e. nearer presort or on the waste line. Alternative recommendation <i>Plastic lids and caps:</i> To enable simple consumer messaging, reattach to clean, empty container even if there is no potential upgrade to plastic reprocessing plants. <i>Metal lids and caps:</i> To enable simple consumer messaging, reattach to clean, empty container even if there is no potential upgrade to MRFs.					

***Note:** Tonnage is based on the percentage of metal and plastic lids measured through the Good Caps trial (Plastics New Zealand. 2023. [Good Caps Report](#). Auckland: Plastics NZ). See Appendix 1.3.

For lids and caps to be effectively recycled at scale in New Zealand, and to build consumer confidence in recycling, the subgroup recommends lids and caps are accepted back into kerbside recycling supported by:

1. A national education campaign is run, focused on behaviour change to teach households and commercial enterprises to place lids and caps back on empty, clean and dry containers.
2. The government provide funding to plastics reprocessors through the Waste Minimisation Fund (WMF) to help pay for extra equipment or infrastructure to safely and properly process lids and caps, and sort PET, HDPE and PP more effectively. We consider that lids and caps should still

be reintroduced to kerbside recycling even where government funding is not available as it will allow for simple, and easy to understand consumer recycling messaging and education in New Zealand.

3. To capture loose lids and caps, the government provides funding to material recycling facility (MRF) operators through the WMF for extra equipment and infrastructure (for example, an additional line) to safely and effectively process lid and caps materials. MRFs operations could be set up in a more standardised way to ensure maximum recovery without introducing higher contamination rates. We consider that lids and caps should still be reintroduced to kerbside recycling even where government funding is not available as it will allow for simple, and easy to understand consumer recycling messaging and education in New Zealand.

We recommend government funding through the WMF, as lids and caps recovery as separate material streams is not commercially viable without government funding; that is, the volume of material doesn't justify the investment for the current reprocessing values.

If government funding via the WMF (or similar) is not available, the subgroup recommends that lids and caps be reintroduced into kerbside recycling, on the proviso that simple, and easy to understand consumer recycling messaging and education in New Zealand is undertaken. We understand that while ideally MRF operators and plastics reprocessors would prefer more optimal sorting, lids and caps are still present in our recycling streams and don't pose a significant problem to their operations.

Part 1: Talking through the problem

1.1 Problem definition

While lids and caps can be recyclable and have a material value reprocessors will pay for when materials are sorted by specific type, the sizing and material make-up of lids and caps make it difficult and expensive to include them in current standardised kerbside recovery.

Although lids and caps were removed from kerbside collection for reasonable and logical reasons, the practical implications have proved challenging for residents and commercial users. This is shown in the lack of any clear drop in lids and caps at MRFs since the changes were introduced in February 2024.

As lids and caps are still requiring intervention in the recycling system in New Zealand, the subgroup proposes either:

1. leaving them out of kerbside, and launching a national education campaign, monitoring and enforcement
2. identifying an alternative to effectively recover lids and caps for reprocessing.

1.2 Objective in relation to the problem

The RLF's aims include that:

1. materials collected at kerbside can be recovered and processed safely and effectively at material recovery facilities
2. there is access to end markets, to support a circular economy

3. national consistency helps rebuild public trust and confidence in resource recovery and recycling in New Zealand.

The subgroup's objective is to determine if lids and caps can be effectively and cost effectively recovered and reprocessed.

Part 2: Deciding on an option to address the problem

The report will assess and make a recommendation on the different recovery and disposal options for both plastic and metal lids and caps.

1. **Landfill** – this would require no change, as consumers are currently advised to place all lids and caps (regardless of size or material) in general waste. It would require education, monitoring and enforcement.
2. **Alternative to effectively recover lids and caps for reprocessing:**
 - **Kerbside recycling** – reintroducing lids and caps into kerbside recycling and exploring different options for capture, namely: loose, reattached and bag-in-bin options were explored.
 - **Product design** – seeking changes to product design to better capture lids and caps; for example, tethering caps on plastic beverage containers, improved tethering for aluminium pull tabs, tethering of ice cream container lids. Tethering is unlikely to be a solution for steel and aluminium bottle caps.
 - **Voluntary product stewardship** – voluntary take-back scheme for producers and consumers (for example, lids and caps programme organised by the Packaging Forum).
 - **Mandatory product stewardship** – mandatory implementation of take-back scheme for producers.

Each of these options have implications achieving consumer behaviour change, and will need national education campaigns to help consumers and commercial operations understand what and how to recycle.

2.1 How is each option being assessed?

To assess the different options, this report will look at the benefits and disadvantages of each, as well as any potential costs. Note that a full cost-benefit analysis was not undertaken, due to budget and time constraints.

2.2 Options

2.2.1 Option 1: Landfill

Under the standard materials policy, lids and caps cannot be accepted in council kerbside collections. While they can be recycled at drop-off collection points, the only other option is to go to landfill through households' general waste bins. The subgroup understands from MRF operators and reprocessors that consumer behaviour has not changed significantly since lids and caps were removed from kerbside recycling in 2024. Nationally, lids and caps remain on many bottles and containers, or loose in the recycling streams.

Currently loose lids and caps sent to an MRF will end up in the waste stream and be mixed with other non-recyclable materials (for example, nappies) for disposal to landfill. Typically, these waste lids and caps consist of small plastic or metal materials that have fallen through the first screen as waste (along with other suitably sized material regarded as waste), plus triggers, pumps and larger two-dimensional lid material that has been manually or automatically removed from the sort line. This mixed waste material is collected and consolidated in a bin or hopper and sent by truck to a Class 1 landfill.

This is the most cost-effective solution from an MRF perspective, using established infrastructure and systems at low risk. This is compared to the high cost and risk of sorting this waste stream into material types and colours for recycling processing. An MRF facility's priority is the cost-effective recycling processing of high-volume materials.

At the Class 1 landfill, the waste lids and caps are buried with other non-recyclable waste. Being a solid material, it is easily and readily handled by the landfill operators. Made from solid plastic or ferrous/non-ferrous material, the lids and caps will not readily degrade in the landfill, and will not contribute to landfill leachate or gas. The main disadvantage of landfill disposal of the waste lids and caps material is the loss of this potentially recyclable resource. They will consume landfill airspace, but given their small size much of this material is likely to fill void spaces in the landfill.

As no significant change in household or commercial behaviour has been observed, if it is decided to continue to landfill lids and caps, there should be a national education campaign from both central government and local authorities to educate consumers to remove lids and caps and place them in a refuse bin. We would also recommend monitoring and enforcement to help shift behaviour.

2.2.2 Option 2: Reintroduction to kerbside recycling

Lids and caps present no risk to kerbside collections, and have no detrimental impact on other materials in kerbside refuse or recycling bins. Based on the subgroup's analysis, there is not a one-size-fits-all approach to sorting lids and caps through MRF operations. On their own, many lids and caps fall under the threshold for sizing (less than 5 cm in any direction) and the subgroup considered the different material types and sizes.

A number of options were considered as part of reintroducing lids and caps into kerbside recycling:

1. added loose into kerbside recycling
2. lids placed back on empty clean containers
3. bag-in-bin (for example, Australian kerby bags).

Added loose into kerbside recycling

This is not an effective option for small plastic lids and caps under 5 cm, as the items aren't large enough to be hand or line sorted at larger facilities. It could be an effective recovery method however for both steel and aluminium lids and caps, through use of magnets and eddy current technology. There is a chance to improve how MRFs use this technology – for example, by using it before the fines sorting to better capture steel and aluminium.

Lids placed back on empty clean containers

Reattachment is a good option for empty clean plastic containers, but not for metal as they either can't be reattached (for example, beer bottle caps), or the base container is a different material to the lid or cap (for example, wine bottle caps). The subgroup recommends magnets and eddy current to effectively recover both steel and aluminium lids and caps. Again, MRFs can improve how they use this technology – for example, by using it before the fines sorting to better capture steel and aluminium.

As long as plastic containers and bottles are free of contaminants (eg. Liquids), operationally there's a high likelihood lids and caps on empty clean containers could be effectively recovered and reprocessed. MRF operators are concerned however about safety and achieving ideal bale densities. Adding machinery at MRFs that would perforate plastic containers would help make sure no liquid is in the bottle, and help safely bale the recovered materials to ideal densities (for example, preventing compression explosions or bursting of full containers). There's also concern that liquid bursting out of the compressed full container could contaminate the rest of the bale.

New Zealand's largest plastics processor, PACT NZ, suggests lids and caps on plastic containers can be recycled, but the process and their material value could be improved by adding better gravity separation equipment, to allow full separation of HDPE, PET and PP cap materials. Without this upgrade, the value of clear PET could drop by around 3 percent.

Bag-in-bin

A bag-in-a-bin approach is not yet possible in New Zealand, but could be an option in the future. The subgroup believes this solution should be saved for hard-to-recycle items, like soft plastics.

The subgroup does not believe this would be a good option, when considering safety and the cost of removing bags of lids from the MRF in-feed streams.

Table A1.2: Kerbside options considered

Kerbside options	Plastic	Metal	Comments
Loose	No, will still end up in general waste	Yes, magnets and eddy current capture these, as long as set at start of sorting line	Good solution for steel and aluminium (including jam jar lids), but not for plastic
Reattached	Reattach lid to empty, clean container	Yes, for steel can lids and aluminium wine caps, but not an option for loose beer caps	Good solution for plastic or metal that is already tethered or can be reattached so long as the container is empty. Not good for loose metal caps
Bag-in-bin	No	No	Not yet viable; this solution should be reserved for the most challenging types of recycling

2.2.3 Option 3: Product design – tethering

Cap tethering is a design solution to keep beverage caps attached to recyclable beverage containers during and after the product is consumed. It can be used for PET, HDPE and liquid paper board containers, but not glass or aluminium. Tethering solutions haven't yet been developed for non-beverage lids and caps, such as jam jar lids, ice cream container lids, and squirt gun lids on

cleaning products, which are more problematic materials in the waste stream (see **Appendix 1.2 Tethered lids and cap examples**).

While the European Union (EU) has introduced mandatory tethering on beverage container caps, this was to address concerns about these becoming litter.

Introducing tethered caps is not a simple issue. Producers need plenty of time to upgrade their bottle blowers, fillers/risers, quality inspection equipment, and cappers. Local suppliers of caps also need time to upgrade their equipment and new moulds, and preform/bottle designs are needed for every bottle for the new bottle threads needed for tethering.

This change is estimated to cost over \$15 million per bottling line in New Zealand. There are 35 PET and HDPE bottling lines across non-alcoholic and dairy drinks, totalling over \$525 million, and this excludes mould redesign and upgrades of preform machines.

Additionally, the New Zealand–Australia Closer Economic Relations (CER) treaty requires that products legally sold in Australia must be eligible for sale in the same condition in New Zealand. Regulating tethered caps in New Zealand would need an exemption from the Australian government, and could put New Zealand producers at a disadvantage to Australian exporters to New Zealand. It could also reduce consumer choice if imported products could no longer be sold in our market.

Benefits of tethering:

- easy for customers to recycle (not having to think about cap on or off when recycling)
- increased material recovery (but not yet proven overseas).

Disadvantages of tethering:

- high capital cost of the change
- widespread consumer rejection and scepticism of the policy as a solution to plastic litter and pollution
- customer annoyance (difficulty opening, closing and drinking from the product)
- New Zealand–Australia CER treaty requires an exemption, unless Australia also moved to mandatory tethering.

While a change in product design might seem a preferred option at first, the capital cost of the change and the lack of current evidence that extra material would be recovered for recycling means tethering is not a good option to pursue right now.

2.2.4 Option 4: Voluntary extended producer responsibility (EPR)

Voluntary take-back schemes for lids and caps are also known as extended producer responsibility (EPR). One is being run in New Zealand's main centres, through the Caps & Lids Recycling Scheme (see [Caps & Lids Recycling Scheme > Where to recycle](#)). The scheme was created by the Packaging Forum when a group of producers and manufacturers did not want to see their recyclable packaging going to landfill, and were keen to meet their packaging targets around recyclability. The programme launched in September 2024 and is funded by 17 members who have joined the scheme:

- Nestle
- Pact Group
- Pharmapac
- Sanitarium
- Suntory Oceania
- Wadding Solutions
- Asahi Group
- Coca Cola EuroPacific Partners
- Danone
- Foodstuffs NZ
- Fonterra
- Goodman Fielder
- Lion
- L'Oreal
- Woolworths (new member)
- Kellogg's (new member)
- Chobani (new member).

Plastics NZ and the NZ Food & Grocery Council are also partners of the scheme.

Both plastic and metal lids and caps are collected by courier or one of the social enterprises (Abilities, Earthlink and Kilmarnock).

- Plastic lids and caps are taken to the Astron Facility (Pact Group) in Auckland for decontamination, washing and preparing for transport to Australia for reprocessing. PACT NZ will sea freight these in full container loads. The final product, incorporating recycled content from the collected lids, will be shared once the materials start to flow through the process – traditionally the recycled lids are processed back into lids and other small plastic items such as scoops and tags.
- Metal lids and caps are taken to a regional metal processor to be turned into ingots and sold offshore for reprocessing into steel and aluminium products. These may be anything from cans and lids, to engineering parts, engines and steel girders.

In the first six months of the scheme, over 3.9 tonnes of material have been recovered for reprocessing.

It is estimated that 5,000–20,000 tonnes of household lids and caps enter the waste stream each year (see **Appendix 1.3: Excerpts from Plastics NZ Good Caps Report (2023)** and **Appendix 1.4: Valpak Report (Aug 2023)**). We believe the current lids and caps being collected through this voluntary product stewardship is ~0.0005 percent of lids and caps material placed on market by weight.

The trial has shown that producers and manufacturers (working with industry bodies) can stand up schemes quickly, and this enables some material recovery. It also allows consumers to be part of the solution, through taking products back to store. However, the amount of material recovered is insignificant compared to the time and effort to recover it.

Benefits of voluntary EPR:

- allows producers and manufacturers to show voluntary support for resource recovery, design for recyclability, and demonstrate leadership in product stewardship
- allows consumers to recycle their lids and caps, so their value is retained and reused
- reduced reliance on landfills
- increased recycling rates
- ARL accreditation – 60 percent of the population has access within 20 km of work or home, growing to 80 percent; it also has brand value in that material/components can count towards packaging sustainability commitments
- provides a platform to educate and engage with consumer
- provides a platform for change advocacy – regulatory and behavioural
- allows producers to pre-empt and shape regulation.

Disadvantages of voluntary EPR:

- voluntary schemes will not achieve the same national scale a mandatory scheme allows
- allows producers and manufacturers to ‘freeride’ on the scheme
- voluntary scheme companies may be abused by brands for marketing or public relations benefits, without taking any real actions
- concern about greenwashing means voluntary EPR schemes could do more harm than good
- major concerns around effectiveness, fairness and compliance
- scaling, effectiveness and longevity will be governed by available funds – limited to a ‘coalition of the willing’.

2.2.5 Option 5: Mandatory EPR

A mandatory EPR for lids and caps alone is not an option. A material-specific (such as plastic packaging) or an all-packaging-materials EPR would include a collection, processing and recycling workstream for lids and caps. This could be done by absorbing an existing voluntary take-back scheme such as the Caps & Lids Recycling Scheme (see **2.2.4 Option 4: Voluntary extended producer responsibility (EPR)**), or any other viable collection method (for example, lids and caps as part of a container return scheme).

A container return scheme could help recover more beverage container lids and caps of all material types, and could also be used to collect all lids under a certain size, depending on how it is set up. For example, the Australian Container Deposit schemes require recyclers to accept a beverage container’s cap as well when recycling it. Return points require the lid to be placed on the bottle/container, or in a separate storage at the depot.

Benefits of mandatory EPR:

- increased fairness as ‘freerider’ issue addressed
- greater material recovery
- greater funding base means collection can be scaled to meaningful levels
- greater funding base means incentives can be offered to support consumer behaviour change
- reduced reliance on landfills

- encouragement for producers to use less packaging and easier-to-recycle materials.

Disadvantages of mandatory EPR:

- extra production costs will end up being paid by the consumer.

The proposed mandatory EPR scheme, Plastic Packaging Product Stewardship (PPPS), would include all plastic lids and caps but not metal products, making it an unviable option. The subgroup also noted a decision is still to be made on a proposed PPPS scheme, and it would likely take a number of years to implement.

2.3 National education

Each of these options need to consider how to encourage consumer behaviour change, and will need national education campaigns to help consumers and businesses understand what and how to recycle. The subgroup has concerns about educating households and businesses to modify behaviour (for example, remove remaining liquid from bottles before reattaching a cap), and a robust education plan is needed. It would also be helpful to educate brand owners on reducing the use of colour in caps, and moving toward using common material types for bottle and lid combinations (for example, HDPE for beverage containers, and PP for yogurts and spreads).

For example, key messages would be as follows:

- Recycle right – empty, clean and dry recycling into bins.
- Every cap counts – leave plastic lids on plastic bottles/containers.
- Loose metal lids are ok!
- Leave those metal pull tabs on – watch out if they’re sharp!
- No pumps or trigger sprays in kerbside.

Moving to a new system would include costs and resources for education and behaviour change campaigns. These costs have not been estimated, but based on \$1 per household, assuming approximately two million households in New Zealand, an effective education and engagement plan to reintroduce lids and caps could be around \$2 million.

The subgroup believes public/private partnerships could get behind this education campaign. Potential partners would be the Ministry for the Environment, councils, and the retail, beverage and manufacturing industries. Initial thinking is that it would take one full-time equivalent (FTE) for at least one year to communicate and engage on the subject, but the subgroup recommends this campaign be ongoing to ensure long-term behaviour change.

2.4 Monitoring and enforcement

We recommend using “bin cops” to monitor and support behaviour change. This is done by waste operators in some regions, with bin cops responsible for monitoring bins for a number of different materials (for example, batteries, waste incorrectly placed in recycling).

2.5 Compare and score the options

Table A1.3: Options analysis

Criteria/factors you considered important when choosing an option*	Option 1 – Landfill This column remains zero, as we are comparing options against the status quo	Option 2 – kerbside recycling (reattach)	Option 3 – product design (tethering)	Option 4 – voluntary EPR	Option 5 – mandatory EPR
Tonnage of material that could be recovered	Score: 0	High tonnage for plastic and for steel and aluminium that is currently tethered or able to be reattached, but not an option for loose metal eg. beer caps.	High tonnage for plastic, but not an option for metal	Low tonnage	High tonnage
Cost of implementation	Score: 0	Low	High	High	High
Ease of implementation	Score: 0	Easy	Difficult	Difficult	Difficult
Time to implement	Score: 0	Low	High	Low	High
Enhances consumer understanding and confidence	Score: 0	High	High	Medium	High
Overall assessment Provide overall summary and score for each option explored	Score: 0	Recommended short-term option	Not recommended	Recommended only if option 2 is not adopted	Recommended long-term option

Part 3: Recommendation

3.1 Which option do you recommend?

The subgroup considers that for lids and caps to be effectively recycled at scale in New Zealand and build consumer confidence in recycling, lids and caps be accepted back into kerbside:

1. We undertake a national public education campaign focused on behaviour change to teach households and commercial enterprises to place lids and caps back on empty, clean and dry containers.
2. The government make funds available via the Waste Minimisation Fund (“WMF”) to plastics reprocessors for additional equipment and/or infrastructure to safely and effectively process lids and caps materials so as to more effectively sub-sort PET, HDPE and PP. We consider that lids and caps should still be reintroduced to kerbside recycling even where government funding is not available as it will allow for simple, and easy to understand consumer recycling messaging and education in New Zealand.
3. To capture loose lids and caps, the government makes funds available via the WMF to fund material recycling facility (“MRF”) operators with additional equipment and infrastructure (e.g. an additional line) to safely and effectively process lid and caps materials. There could be opportunity to optimise the set-up of MRFs in a more standardised way to ensure maximum recovery without introducing higher contamination rates. We consider that lids and caps should still be reintroduced to kerbside recycling even where government funding is not available as it will allow for simple, and easy to understand consumer recycling messaging and education in New Zealand.

Government funding via the WMF is recommended as it’s acknowledged that the recovery of lids and caps as separate material streams is not commercially viable without government funding in the first instance (i.e. the volume of material doesn’t justify the investment for the current reprocessing values).

If government funding via the WMF is not available, the subgroup recommends that lids and caps are reintroduced into kerbside recycling, on the proviso that simple, and easy to understand consumer recycling messaging and education in New Zealand. We understand that while ideally MRF operators and plastics reprocessors would prefer more optimal sorting, lids and caps are still present in our recycling streams and don’t pose a significant problem to their operations.

3.2 What could implementation of the recommended option look like?

To implement this change would require a number of workstreams:

- regulatory change
- education campaign and communication
- business case for investment in MRFs
- business case for investment in reprocessors.

3.2.1 Regulatory change

- timing

- process.

3.2.2 Business case for MRF investment

- mapping of MRF capability/requirements (which MRFs need investment)
- process change at MRF to enhance recovery without impacting safety or contamination rates.

3.2.3 Business case for reprocessor investment

- mapping of reprocessing capability/requirements (which reprocessors need investment)
- process change at reprocessing facilities.

3.2.4 Education campaign and communications

- engage with marketing and communications specialists
- costings
- timing.

Appendix 1.1: Lids and caps examples

Definition of lids and caps

Exclusions:

- small loose lids and caps (too small for recycling plants to process)
- flat lids (ice cream containers)
- pumps and triggers (found on hygiene and household cleaners)
- containers where the shape and function of a lid and base are reversed (domed plastic cake container the upper part of the packaging acts like a container while the lower part is like a large flat lid); the upper part would be accepted as it can be mechanically sorted like a container, while the lower part is excluded for the same reasons as large flat lids.

Exemptions:

- plastic lids, caps, or tops that are tethered to a recyclable container accepted in kerbside recycling
- tethered means that it stays attached to the bottle or container when open and cannot be easily removed; tethered lids should be left open and attached for recycling
- tethered steel can lids (ends) that have not been fully removed from the empty can.

APCO – New Zealand kerbside implementation guide for ARL

Containers with untethered lids

MfE guidance is that containers must be recycled without their lids, and all plastic and metal (excluding steel on can-openable or ring-pull cans) are not recyclable. To support this messaging, it's recommended that for the NZ market, containers with untethered lids, the following application of the ARL is used:

- E.g. Squeezy sauce bottle with untethered lid: Bottle – Conditionally Recyclable with instructions to 'Remove lid', Lid – Not Recyclable.

NOTE: the definition of a tethered lid, as per the gazette is: Tethered means that it stays attached to the bottle or container when open and cannot be easily removed.

NOTE: It is not possible to modify a Recyclable or Not Recyclable outcome in PREP to be Conditionally Recyclable with instructions to Remove Component' or for the majority of components, 'Separate to Recycle'. In order to apply the above best practice labelling, users will need to provide this additional guidance to their artwork / design teams, instructing them to use the Conditionally Recyclable ARL with either 'Separate to Recycle' and Not Recyclable, rather than the outcome in the PREP report.

APCO – New Zealand guidance continued...

Material	Sub-category	Outcome in PREP	Correct on-pack ARL based on MfE guidance	Examples
Undersized items	Three-dimensional items smaller than 50mm at their widest point	Not Recyclable	Not Recyclable	Small caps and lids *APCO is aware of a product stewardship scheme currently in development. The Drop off only logo may become available for members of this scheme should they meet the requirements of the ARL program.

Rigid plastics, flexible plastics, metal (i.e. excludes fibre and glass lids that meet all other thresholds for recyclability)	Lids, caps, and tops (including pumps and triggers)	Not Recyclable. This excludes glass and fibre lids that meet all other thresholds for recyclability). It also excludes steel lids on cans (ring pull or those opened with can openers only), which provided they meet all other thresholds for recyclability are permitted to be modified at the artwork design stage to be Conditionally Recyclable with instructions to 'Leave Attached'. NOTE: it will not be possible to modify the Not Recyclable outcome for steel lids in the PREP report, this will need to be done by your team when designing the artwork.	Not Recyclable. This excludes glass and fibre lids that meet all other thresholds for recyclability). It also excludes steel lids on cans (ring pull or those opened with can openers only), which provided they meet all other thresholds for recyclability are permitted to be modified at the artwork design stage to be Conditionally	Lids, caps, and tops (including pumps and triggers) of all types of containers - e.g. bottle caps, jar lids, etc (except steel lids on cans and glass and fibre lids that meet all other thresholds) *APCO is aware of a product stewardship scheme currently in development. The Drop off only logo may become available for members of
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Instruction text within Conditionally Recyclable ARL	Material / format typically applied to	Permitted in the NZ market?
Crush Bottle & Replace Cap	Small plastic lids on recyclable plastic bottles	No
Leave attached	For steel lids on steel cans that are opened with a ring pull or can opener	Yes – for steel lids that are opened with a ring pull or can opener only

Cap (aka closure) types

Dispensing caps



Dispensing closures

Triggers, mist spray and pumps



Other dispensing closures



Orifice reducers and dripper caps



Non-dispensing caps

Simple screw-caps, childproof cap and tamper-evident cap



Application caps

Brush and rod caps – nail polish, glues, paints



Kitchen caps

Grinders, shakers and sprinklers



'Tops' synonymous with caps and used to reference metal beer crown caps and bottle closures



Metal lids

Screw, push and easy peel



ROPP caps – roll on, pilfer proof



ROPP caps are where product tampering can be a problem (such as spirits and liqueurs), and provide an airtight seal for sparkling wines. With this system, the capping machine presses a blank aluminium cap on the threaded neck of the bottle for a tamper-proof seal.

Muselet (wirehoods)



Wire cage that fits over the cork of a bottle of [champagne](#), [sparkling wine](#) or [beer](#) to prevent the cork from emerging under the pressure of the carbonated contents.

Swingtop closures



Swingtop closures, available in both ceramic and plastic, offer a versatile and reliable solution for beer packaging. Each swingtop comes equipped with a stopper, rubber seal, and strong metal clasp, ensuring an airtight seal that can be easily opened and re-sealed. These are considered 'tethered'.

Mixed metal and plastic caps and lids



Plastic lids

Usually flat and closure for tubs or containers, and are generally applied with pressure to clip onto the container.



Appendix 1.2 Tethered lids and cap examples

There are many designs for beverage tethered caps. Below are six common examples used in the European Union.



Snap Cap

Open the cap with a click to lock the cap at 220° and close it with a click at the front to ensure a tight seal.



Hinge Caps

The closures have an opening angle of 180° and can be locked in place, which is why they are sometimes also called 'clip-aside caps'.

The cap is designed to be less of a hindrance when drinking and pouring.



Twist Cap

Thanks to the twist-mechanism, the closure can be positioned as required and should be less of a hindrance when pouring.



Sport Cap

The sports cap does not detach from the container.



Lasso-Caps

The latches have opening angles of more than 180° without a locking function.



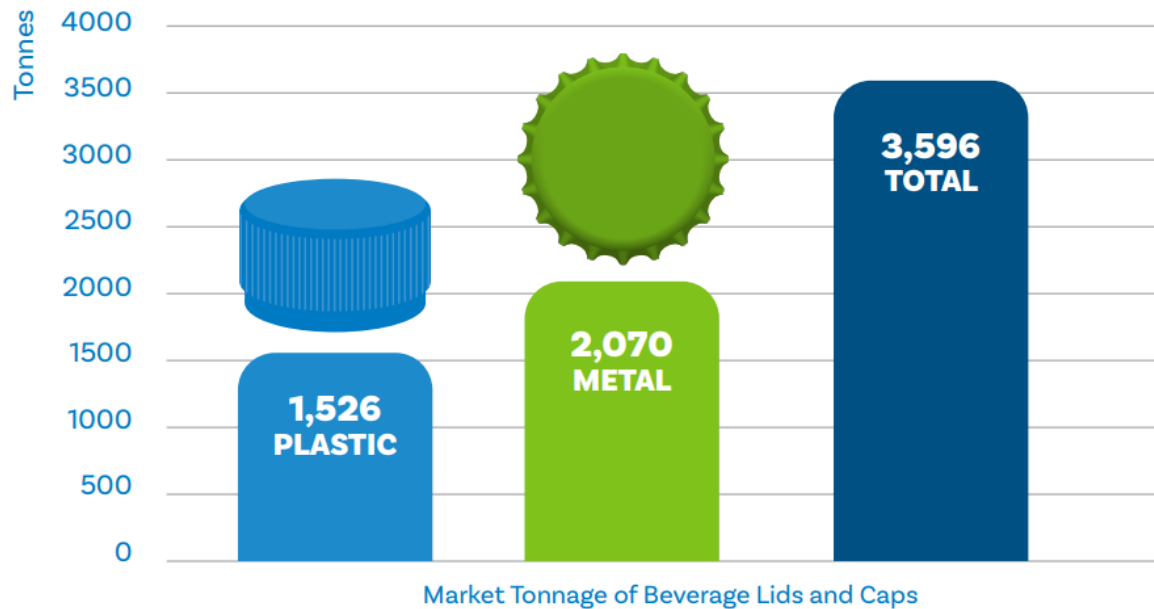
Heli Cap

Solution for Tetra Paks / dairy products and juice. Characterised by 'prongs' in the lid that disappear into the opening when closed.

Recent research commissioned by the German government on the usability and consumer acceptance of tethered caps showed few benefits and significant rejection by consumers. The full report can be found at Lang B, Bastians S. 2024. [Usability and consumer acceptance of tethered caps for beverage containers](#). Berlin: DIN Consumer Council.

Appendix 1.3: Excerpts from Plastics NZ Good Caps Report (2023)

The results were:



Plastics Data by Weight from Sample

Item Type	Picture Reference	Category	Product ID Code	Material Type	Weight in Kgs	Representation
PLASTIC BOTTLE CAPS	C	Beverage	2	HDPE #2	6.092	19%
PLASTIC CAPS	D	Beverage	2	HDPE #2	10.402	32%
SIPPER CAPS	N, O	Beverage	2 AND NONE	HDPE #2	1.116	3%
OTHER	P, Q, S, T, U	Mixed	NONE	PP #5, HDPE #2, LDPE #4	9.896	30%
COFFEE CAPS	G	Non-Beverage	NONE	HDPE #2	1.2	4%
ICE CREAM LIDS	M	Non-Beverage	5	PP #5	0.738	2%
GOLD BABY POWDER LIDS	L	Non-Beverage	NONE	LDPE #4	0.532	2%
LIDS (varied)	H, I, J, K	Non-Beverage	5	PP #5	1.82	6%
RED BOTTLE HOLDER DOOFERS	R	Non-Beverage	2	HDPE #2	1.086	3%

Metal Data by Weight from Sample

Product Type	Picture Reference	Category	ID	Type of Material	Sample KG	Representation
WINE BOTTLE CAPS	A	Beverage	No	Aluminium	6.56	23%
BEER BOTTLE CAPS	B	Beverage	No	Steel	19.13	68%
CAN CLIPS	E	Beverage	No	Steel	1.296	5%
METAL/ALU LIDS	F	Non-Beverage	No	Mixed	1.178	4%
TOTAL					28.16	

Appendix 1.4: Valpak Report (Aug 2023)



Research to Support the Co-design of a Plastic Packaging Product Stewardship Scheme for New Zealand

August 2023

James Skidmore, Dr Hugh McCoach, Zoe Goodman, Shannon Moxham, Dr Rachel Stirrup and Max Grimshaw

Valpak Limited. 2023. [Research to Support the Co-design of a Plastic Packaging Product Stewardship Scheme for New Zealand](#). Stratford-upon-Avon: Valpak Limited.

Appendix 2: Focus material report: Secondary material thresholds for complex fibre

Executive summary

Fibre packaging accepted in kerbside recycling is mixed with other materials and exported as mixed paper. Items excluded from kerbside recycling include drink cartons, cardboard tubes for chips, takeaway coffee cups, waxed cardboard, foil-based gift wrapping, glittery wrapping and cards, shredded paper, tissues, and paper towels. Consumers are advised to remove large plastic inserts from boxes.

This workstream focused on coated paper packaging – also known as composite paper packaging, or complex fibre packaging. This is fibre packaging coated with polymer, or two fibre layers laminated together with a polymer. The objective is to determine what percentage of secondary materials may be used with fibre and still be considered recyclable. Since 2023 composite fibre containing any percentage of plastic must be labelled “not recyclable” under the ARL for New Zealand. Liquid paper board is excluded, but cups for beverages, ice cream, or noodles are included.

Coated paper/composite fibre packaging

Technological advancements have allowed thin layers of coatings or polymers to be applied to virgin or recycled papers for a growing number of consumer goods applications. These materials, known as coated papers or composite packaging, are increasingly used as alternatives to plastic by producers globally. Coated papers to a number of things:

- enhance the paper surface properties for improved print quality (reducing ink absorption into paper)
- make the material sealable for automated packing line processing
- improve moisture barriers to extend product shelf life
- enhance oxygen barriers of paper to extend product shelf life.

Approximately 58 percent of composite fibre materials sold in New Zealand are imported from Australia, where the current threshold for single-sided coating is 15 percent. However, in 2026 Australia will introduce a minimum of 95 percent purity for fibre bales. Another 10 percent of composite fibre materials in New Zealand are imported from Europe, where the threshold is 5 percent.¹⁰

Why are coated papers a problem?

Coated papers pose challenges within the current recycling system, especially at the material recovery facility (MRF) stage. The coatings are typically thin, not easily visible, and difficult to separate during sorting. As a result, these materials are often included in mixed paper bales. When identified, they may be treated as contaminants due to concerns about their effect on

¹⁰ The Packaging and Packaging Waste Regulations (PPWR) in Europe defines composite packaging as “a unit of packaging made of two or more different materials **which are part of the weight of the main packaging material and** cannot be separated manually and therefore form a single integral unit, unless one of the materials constitutes an insignificant part of the packaging unit and in any event no more than 5% of the total mass of the packaging unit and excluding labels, varnishes, paints, inks, adhesives and lacquers”.

bale quality, which may mean the bale trades at a negative gate fee, despite being fibre-based. They devalue paper materials in a saturated market – 98 percent will be the new threshold, accepting that 1 percent will be a form of general contamination (anything above 99 percent purity is very difficult). This leaves very little room for all complex fibres, including secondary ones, which to a paper processor are seen as contamination.

Some coatings, such as starch or clay, may have little to no impact on fibre recovery. However, without clear definitions or technical understanding, these distinctions may be disregarded. This issue affects MRF operators and paper recyclers by reducing the value of the mixed residual paper stream. Quality standards for paper exports require contamination to be within 1–5 percent of the weight of the bale, depending on the paper grade.

Producers face difficulties because since 2023 they have not been able to apply a recycling label to fibre packaging unless it is 100 percent fibre. There are varying rules between Australia and New Zealand, and between New Zealand and its trading partners.

Setting a threshold

It is important to distinguish between the threshold permitted in a paper bale and the threshold set for a unit of packaging. For resource recovery the critical threshold is the quality of the paper bale; for the brand owner/producer, it is the percentage of plastic or other material permitted in combination with the fibre.

Global standards for paper

EU's Packaging and Packaging Waste Regulation (PPWR)

The EU's PPWR defines composite packaging as recyclable if the non-primary material (for example, plastic coating) both:

- makes up no more than 5 percent of the total weight of the packaging unit
- cannot be separated manually, meaning it is integrated.

This means that if paper is coated with plastic **at or below 5 percent by weight**, it **can still be classified as recyclable**, assuming it passes other conditions like recyclability testing or compatibility with paper mill processes. In the UK, 95 percent is considered recyclable under PPWR.

The European paper industry uses EN643 as the list of standard grades for paper and board for recycling. Within this there are grades that accept plastic coatings/layers up to 2 percent.¹¹

The Recycled Materials Association (REMA) uses the Institute of Scrap recycling Industries (ISRI) standard, which has a mixed fibre category. This includes all paper and paperboard of various

¹¹ 2.09 Carbonless copy paper may contain 2 percent paper with plastic layer.

3.03 Woodfree binders – may now contain up to 2 percent plastic layered paper.

5.03 Liquid board packaging – used liquid packaging board with plastic layer (with or without aluminium content), containing a minimum of 50 percent by weight of fibres.

5.11 Printed white wet-strength woodfree papers – blister pack may be board with plastic layers and inserts.

5.12 Used kraft sacks may include plastic layer papers.

qualities, and prohibited materials must be less than 2 percent and outthrows less than 3 percent.¹²

In practice, paper mills do not measure plastic lined/coated fibre, because it is difficult to see in a bale whether the fibre has a coating or not. Complex fibre packaging is accepted for recycling in mixed/commingled recycling bins in the United Kingdom (UK), Belgium and Germany, as long as they meet recyclability pulpability tests. Bale quality in exports is getting tighter however, and a 2 percent tolerance level may not be good enough as standards for global markets accept less contamination. New Zealand now has very limited onshore paper and board processing, and relies on overseas export markets for fibre, and compliance with mixed paper bale acceptance criteria at global paper mills.

The other side of the argument is aligning with Europe, where the PPWR sets stricter limits on paper products than other materials, and there's no clear definition of "outthrow", which means decisions on what is undesirable are subjective.

Recyclability evaluation test

The Confederation of European Paper Industries (CEPI) (<https://www.cepi.org/>) has published an update of its European recyclability laboratory test method document¹³ to help the paper and board industry analyse the recyclability at scale of packaging, paper and board products sold in Europe. This includes Part 3: Recycling Mill with Specialised Process guidelines.¹⁴

APCO position – Australia

APCO consulted on thresholds for double-sided laminated/coated paper board (composite fibre packaging). There were conflicting views from MRFs and paper reproprocessors, traders, packaging manufacturers and brand owners, so APCO has retained the "Under Review" status for these packaging formats and that pulpability testing is not recommended. APCO has delayed finalising this outcome until the Australian government's Department of Climate Change, Energy, the Environment and Water (DCEEW) provides guidance for mandates; this has not yet been resolved.

This means the ARL's recyclability label cannot be applied to these formats through PREP. Single-sided laminated/coated paperboard is still at 15 percent threshold as recyclable with reduced value, however an industry group has been convened to discuss thresholds for single- and double-sided packaging. Onshore processing has more tolerance than export markets, which are more challenging. They are waiting for government guidance on Australian design standards, and it is not clearcut where the threshold may be set. Thresholds above 5 percent

¹² ISRI notes that specialty grades that include the presence of wet strength, poly coatings, plastic, foil, hot melt, and glue are not included in the regular grades of paper stock and many mills have special equipment and can utilise large quantities of these grades. ISRI is not establishing specific specifications which would refer to these factors as the type of wet strength agent used, the amount of polycoating etc, and that the specification for each grade should be determined between buyer and seller and recommends that purchase be based on sample. There are various specialty grades, including waxed cup, polycoated milk carton, waxed corrugated, wet strength corrugated, beer carton scrap.

¹³ CEPI recyclability test method version 3, accessed at <https://www.cepi.org/cepi-recyclability-test-method-version-3/>, 19 July 2025.

¹⁴ Industry tools and guidelines, accessed at <https://4evergreenforum.eu/about/industry-tools-and-guidelines/>, 19 July 2025.

may be a problem. Feedback during APCO’s consultation process is consistent with the divergent views expressed in New Zealand.

APCO position – New Zealand

APCO placed fibre formats with secondary materials (single- and double-sided coated paper) at Under Review status in PREP in 2023 and has taken the kerbside standards to mean “paper or cardboard that is plastic lined (single- or double-sided), including formats where any polymer type (including compostable plastics) has been selected in PREP as a secondary material, bonded via double-sided lamination will be categorised as **Not Recyclable**”.

Bale composition in New Zealand – fibre bale audit February 2024

To quantify the amount of complex fibre packaging in mixed paper bales in New Zealand, APCO, The Packaging Forum and the New Zealand Food & Grocery Council commissioned Sunshine Yates Consulting to audit a selection of bales from four large MRFs around the country. The audit did not attempt to sample from all types of MRFs (that is, automated versus manual), but targeted MRFs with larger output. Each MRF was asked to randomly select two mixed-fibre bales.

The results of the audit of the eight bales of mixed fibre are presented:

- as an ‘average’ bale
- by MRF (the results of the two bales combined)
- by individual bale.

Bale weights vary within each MRF and between MRFs, with the heaviest bale weighing 1,080 kg and the lightest 560 kg. A total of 2,077 kg of material was sorted during the audit. The average weight of a mixed-fibre bale is 867.60 kg, and contains on average 520 pieces of complex-fibre packaging. Note that the weight of complex fibre is measured as the total weight of the composite, and not the plastic component.



Under the definition of complex fibre, the auditors included:

- cardboard multimaterial
- fibre with plastic
- fibre with other materials
- coated/composite fibre
- paper cups
- food and beverage cartons
- other liquid paperboard.

Across all bales the composition was as outlined in Table A2.1.

Table A2.1: Bale composition

Category	Description	Average bale kg	% weight
Fibre only	Non packaging, eg, news, magazines	454.64	52.4
Fibre only	Packaging – corrugated card, paperboard, paper bags	347.11	40

Category	Description	Average bale kg	% weight
Total	Fibre	801.75	92.4
Fibre in combination with other material	Non packaging, eg, paper envelopes with plastic windows, books with popout	11.21	1.3
Complex-fibre packaging	Corrugated cardboard with lining, bags with plastic handles, boxes with plastic windows, liquid paperboard, paper cups etc	24.07	2.8
Total	Fibre in combination with other materials	35.27	4.1
Other materials	Contamination through commingling	30.47	3.5

By MRF the percentage comparison is outlined in the following Table A2.2.

Table A2.2: Material percentage comparison between MRFs

Category	Description	MRF A %	MRF B %	MRF C %	MRF D %	Overall average (%)
Fibre only	Non packaging, eg, news, magazines	37	61.4	51.9	55.2	52.4
Fibre only	Packaging – corrugated card, paperboard, paper bags	48.5	28.5	44.9	39.9	40
Total	Fibre	85.5	89.9	96.8	95.1	92.4
Fibre in combination with other material	Non packaging, eg, paper envelopes with plastic windows, books with popout	0.5	3.1	0.3	1.2	1.3
Complex fibre packaging	Corrugated cardboard with lining, bags with plastic handles, boxes with plastic windows, liquid paperboard, paper cups etc	3.7	3	1.9	2.8	2.8
Total	Fibre in combination with other materials	4.2	6.1	2.2	4	4.1
Other materials	Contamination through commingling	10.4	4	0.9	1	3.5

Of the complex-fibre packaging identified, liquid paper board and paper cups represent 1.3 percent (MRF A); 1.5 percent (MRF B); and 0.5 percent (MRF C & D). These materials were specifically excluded from kerbside collections nationwide from February 2024, so a future audit could be expected to see a reduction in these products. On average, there were 0.38 items per kg, or 328 items per bale of fibre mixed with plastic or other materials. This calculation is based on the total weight of the product, not just the non-fibre percentage.

Table A2.3: Material weight comparison between MRFs

Category	MRF A #/kg	MRF A #/kg	MRF A #/kg	MRF A #/kg	Average – bales combined #/kg	Average – all bales combined # per bale
Cardboard multimaterial	0	0	0	0	0	0
Composite fibre packaging	0.01	0.01	0.01	0.01	0.01	5
Fibre with plastic	0.35	0.3	0.29	0.32	0.31	270
Fibre with other materials	0.08	0.04	0.07	0.05	0.06	53
					0.38	328

Paper and cardboard market size

Around 550,000 of the 830,000 tonnes of paper and cardboard products produced every year is sent for recycling. This includes paper and cardboard from households and businesses, and some non-packaging uses, such as newspapers.¹⁵

The 2024/25 closure of Oji's Penrose paper mill and the paper-making section of their Kinleith plant will reduce onshore recycling by approximately 200,000 tonnes. Oji will continue to collect wastepaper and cardboard, but will now ship it to their newer Malaysian plant before re-importing the recycled product for their box-making operations or existing customers. The estimated amount of coated/composite fibre packaging placed on the New Zealand market annually is 7,100 tonnes (including plastic-lined cups), which makes up around 1 percent of the total paper and cardboard on the market – but potentially up to 12 percent of the 50,000 to 60,000 tonnes of mixed fibre collected from households at kerbside. The industry is aiming for 2 percent contamination (that is, 5,000 to 6,000 tonnes), so the 7,000 tonnes of secondary complex fibres placed on the market presents a significant risk.

Most coated/composite packaging is imported into New Zealand. As the bale audit showed, it is difficult to tell the difference between packaging made from 100 percent fibre packaging and that from fibre with a lining. Because of this, these materials are ending up in the recycling stream.

Table A2.4: Packaging tonnage by source and materials

Segment	NZ made (tonnes)	Aus made (tonnes)	Asia/ Europe (tonnes)	Notes
Corrugated liners	1,500	500	0	95%+ fibre.
Flexibles – locally packed	1,000	800	200	95%+ fibre Butter wrap, yoghurt lids, powdered sauce/soups; photocopy wrap paper.

¹⁵ Wilson D, Lewis A. 2023. [Waste and resource recovery: Infrastructure and services stocktake: Full project summary report](#). Prepared for the Ministry for the Environment by Eunomia Research & Consulting Ltd (NZ). Wellington: Ministry for the Environment.

Segment	NZ made (tonnes)	Aus made (tonnes)	Asia/ Europe (tonnes)	Notes
Flexibles – imported package	-	1,000	100	Hot chicken bags, oat sachets, dried soup sachets.
Fibre cups with plastic linings	1,300	600	100	Either imported from Europe as base board and processed in New Zealand or arrives as a finished cup.
Total	3,800	2900	400	

When liners are used for manufacturing corrugated cartons, the plastic component is likely to be less than 3 percent. As a result, these products are difficult to identify in the waste stream as containing plastic, but when reported through the ARL PREP tool will have a “not recyclable” label. The amount of plastic in other products (like sachets and wrappers or photocopy wrap) is usually within the 5–15 percent threshold. Claims that these products are recyclable would need to be checked by passing the recyclability tests from the Confederation of European Paper Industries (CEPI) or the German Paper Institute (PTS).

There are also around 2,000 tonnes of paper cup material either imported from Europe as a base board and processed in New Zealand, or imported as a finished cup. Around 70 percent of cups are made locally.

Other considerations

The design of a mandatory plastic packaging product stewardship scheme (PPPS) shows the need for clear guidance on whether there is a threshold for plastic combined with fibre packaging, because these composite materials are included in the priority product declaration for plastic packaging.

Part 1: Problem definition

Improvements to technology have allowed both virgin and recycled fibres with a thin layer of barrier coating to be used for many consumer goods. These materials are often known as coated papers or composite packaging. They are difficult to tell from 100 percent fibre packaging, and consumers believe they are paper or cardboard and include them in recycling. Producers are concerned that stringent regulations may slow down packaging innovation and push companies to plastic packaging, which has lower recycling rates. They are also concerned about the financial and operational investments they’ve already made in these packaging formats, given these materials previously met the Australasian Recycling Label (ARL) and pulpability testing requirements.

Fibre packaging with barrier protection is a problem for MRF operators, paper recyclers and reprocessors because it contaminates the clean paper stream. This leads to lost income, as mixed residual paper that includes composite fibre costs more than it earns for reprocessors.

The kerbside standards identified specific products that could be included, but it is not easy for consumers to identify fibre packaging with a thin layer of coating. The ARL is used by brand owners in Australia and New Zealand to show consumers whether packaging is:

- recyclable at kerbside
- recyclable through a take-back system
- not recyclable at all.

Because there are no clear rules or labelling, consumers often place anything that looks like paper in kerbside collections, no matter how much actual paper fibre it contains.

In 2023 APCO began talking with New Zealand paper recyclers about setting a recyclability limit for complex-fibre packaging. They also paused adding the ARL recycling label to these products. There is now varying guidance for composite-fibre packaging in Australia and New Zealand.

For resource recovery the critical threshold is the quality of the paper bale. For the brand owner or producer, the threshold is the percentage of plastic or other material permitted to be combined with the fibre.

Market size

None of the research into paper consumption has separated out complex-fibre tonnages. This report uses industry information and estimates that indicate there is around 7,100 tonnes of plastic-lined fibre packaging placed on the market annually of which 4000 tonnes will be in the 95+ percent fibre category. See Table A2.4 for details.

Subgroup objective

The subgroup's objective is to develop a recommended threshold for coated/composite fibre packaging. Since 2023 fibre containing any plastic must be labelled "not recyclable" under the ARL. The subgroup has considered the questions set out in Table A2.5.

Table A2.5: Questions considered by subgroup on secondary material thresholds for complex fibre

Question	Activity	Current status
Why are coated papers being used? What is their purpose?	Paper coatings are used to achieve one or a combination of attributes and reflects the lengthening of supply chains requiring food to be kept fresher as it is shipped around the world. These attributes include: a) making the surface better to print or more aesthetically pleasing, eg, magazines, catalogues, posters b) making the material sealable, eg, toilet paper and confectionery wrappers c) improving the moisture barrier, eg, sugar/salt packages, food wrappers, sachets d) improving the oxygen barrier of paper, eg, vacuum-sealed food or coffee packaging.	Coating technology has moved quickly and may have been developed without input from recyclers. CEPI and other organisations are aiming to clarify what can and can't be hydro pulped.
How much is placed on the market and where is it coming from?	Around 7,100 tonnes of plastic-lined fibre packaging (excluding liquid paper board cartons), of which around 50% is imported from Australia or Europe/Asia.	Around 4000 tonnes of plastic lined fibre will meet the 95+ secondary fibre threshold.
What are the global specifications for paper bales?	The European paper industry uses EN643 as the list of standard grades for paper and board for recycling. This has grades that accept plastic coatings/layers up to 2%. ISRI specification has a mixed-fibre category that consists of all paper and paperboard of various qualities – prohibited materials may not exceed 2% and outthrows may not exceed 3%. CEPI states “Designers should restrict plastic content to 5% of pack weight as a maximum, recycling industry would prefer no more than 3% by weight”	Bale quality specifications are defined.
How are global market specifications for bales being interpreted with regards to setting a threshold for individual units of packaging?	The Packaging & Packaging Waste Regulations (PPWR) in Europe defines composite packaging as “a unit of packaging made of two or more different materials which are part of the weight of the main packaging material and cannot be separated manually and therefore form a single integral unit, unless one of the materials constitutes an insignificant part of the packaging unit and in any event no more than 5% of the total mass of the packaging unit and excluding labels, varnishes, paints, inks, adhesives and lacquers”¹⁶ APCO is waiting on government guidance on Australian design standards, and it is not clearcut where the threshold may be set but there are indications that above 5% may be a problem.	EU guidance is clear – if its polymer coated (eg, LDPE) with up to 5% plastic then it is classed as recyclable. If it is above 5–15% polymer coating, the materials need to be tested by CEPI or PTS to test recyclability.
What do the results of the paper bale audit tell us?	The audit found on average 7.6% of total contamination per bale, of which 1.8% was from fibre with plastic or other materials including plastic-lined fibres. Quality levels varied between each MRF. Contamination from co-mingling with other materials was on average 3.5%. From all complex fibres including LPB, cups and fibres with other materials contamination was 2.8%.	Fibre with plastic contributes to the contamination but there is more contamination from other materials.
What is the potential market size for these products?	The volume of coated paper is approx 1% of the total export paper market. However, it could be up to 12% of the household fibre collected at kerbside (for over 95% threshold, up to 7% of the household kerbside fibre collection). Coated paper production capacity in New Zealand for these products is a maximum of 10–12,000 tonnes.	Volume is calculated at the 100% weight of product, not the percentage of plastic. Growth is limited by production capacity and market size for such specification (that is, low barrier).

¹⁶ PPWR Article 3: Definitions 24, 22 January 2025. Accessed at <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32025R0040> 20 July 2025.

Part 2: Options

The subgroup considered the following options:

1. Alignment with Australia: single- and double-sided laminated coated paperboard.
2. Adopt minimum of 95 percent by weight – that is, if it is polymer coated with up to 5 percent plastic then it is classed as recyclable.
3. Between 85–95 percent, the product must meet agreed pulpability standards (for example, CEPI).
4. Zero tolerance – 100 percent fibre.

Part 3: Preferred options analysis

The current zero percent threshold presents issues, as it is not in line with international settings. Labelling a product that looks and feels like paper as not recyclable is confusing for households and businesses, who will put it in the recycling bin anyway. Table A2.6 below outlines the considerations and risk mitigation measures.

Table A2.6: Options considerations and risk mitigation measures

#	Option	Considerations	Risk mitigation
1	Alignment with Australia – for single- and double-sided laminated coated paperboard	- Australia is currently reviewing its tolerance thresholds, which currently are 85% fibre and up to 15% secondary material for single-sided coated or laminated board subject to the materials being tested for pulpability by CEPI or similar organisation. 5% threshold to be accepted as recyclable. - Specify the products – corrugated liners, sachets etc – excludes liquid paperboard.	Recycling claim for between 5 and 15% coating or lamination to be predicated on meeting CEPI (or other agreed) testing protocol for pulpability. <5% threshold is accepted as recyclable for composite fibres. Set timeframe for review and conduct further bale audits to monitor impact on bales post standardisation and respond to any market growth of this market segment.
2	Adopt minimum of 95% by weight	- Aligns with the EU PPWR where if fibre is polymer coated with up to 5% plastic it is classified as recyclable. - Addresses the corrugated liners and a percentage of the coated fibre packaging = estimated 4000 tonnes placed on market. - Would not stop complex fibre packaging being labelled as recyclable. If products are not labelled, consumers have no guidance on what to do with the packaging, which look like fibre and therefore likely to continue to be placed in the recycling bin.	<5% threshold is accepted as recyclable. Annual mixed fibre bale audit to monitor market growth.
3	Adopt minimum of 85% by weight threshold with caveats	- Above 95% is accepted as recyclable. - Between 85 and 95% subject to meeting agreed pulpability standards. - This may be same as Option 1 depending on the outcome of Australia's review process.	Recycling claim for between 5 and 15% coating or lamination to be predicated on meeting CEPI (or other agreed) testing protocol for pulpability. <5% threshold is accepted as recyclable for composite fibres.
4	Zero tolerance	- From a producer perspective this is not acceptable and would put New Zealand out of step with its main trading partners. - Paper recyclers prefer this option to enhance the quality of export bales. - Would not stop complex fibre packaging being imported or manufactured, just being labelled as recyclable. If products are not labelled, consumers have no guidance on what to do	

#	Option	Considerations	Risk mitigation
		with the packaging, which look like fibre and therefore likely to continue to be placed in the recycling bin.	

Part 4: Recommendation

We propose a staged approach to resolving this issue.

Stage 1: Over 95% fibre single sided coatings are accepted as recyclable and reintegrated back into the ARL PREP assessment tool. This aligns with Europe's PPWR and the UK where 95% is considered recyclable as well as Australia.

Risk mitigation

- Contact paper mill buyers in SE Asia to confirm acceptance.
- Conduct mixed fibre bale audit annually to monitor volumes.

Stage 2: Agree pulpability testing protocols, for example CEPI, for single-sided coated fibre over 85% and under 95% by weight. This will require further research into the pulpability capability of paper mills used by the New Zealand paper recyclers in Malaysia and elsewhere.

Appendix 3: Focus material report: Aerosols

Executive summary

In New Zealand 25.7 million¹⁷ household aerosols are consumed annually, 98 percent of them imported from Australia and Europe, and 99.8% for personal care aerosols. This equates to 16.6 million personal care, food products and household products; 9.1 million from the DIY/paint/automotive and other categories.

Table A3.1: Aerosol use and material by tonnage

Aerosols	Aluminium	Steel	Total
Personal care products	9,405,000	95,000	9,500,000
Household products incl. insect sprays	235,000	4,465,000	4,700,000
Food products	720,000	1,680,000	2,400,000
Total	10,360,000	6,240,000	16,600,000

In comparison, the container return scheme (CRS) design working group project¹⁸ estimated 514,951,000 aluminium beverage cans weighing on average 16 grams. More generally, there are over 2 billion steel cans consumed in New Zealand every year, and work by the New Zealand Food & Grocery Council (NZFGC) in 2023 with its members estimated 180 million steel food cans. Further research by Valpak as part of The Packaging Forum's mass balance assessment in 2024 estimated 12,995 tonnes¹⁹ of steel cans consumed in the consumer grocery, non-grocery, back-of-store and non-consumer hospitality sectors.

Aerosols therefore represent up to 5 percent of the household aluminium market, and up to 3 percent of the steel can market.

Based on the available data, the financial impact would be around 1 percent for aluminium, and there is no differential pricing for steel bales with or without aerosols.

Aerosols provide a convenient means of storing and dispensing a wide range of goods for personal, household, medical, technical and industrial use. The most common form of aerosol packaging is an aluminium pressurised vessel with plastic lid and trigger. There are limited redesign or substitution options to reduce the flow of aerosols in the supply chain.

While aerosols are recyclable and there is an established market for recycled aerosol containers, operators at material recovery facilities (MRFs) are concerned about the potential decline in value for used beverage cans (UBC).

Household aerosols were excluded from the kerbside standard recycling list due to risks in collection, sorting, and sales, including fire hazards, health and safety concerns, and market risks. Despite these exclusions, aerosols remain part of the waste stream and must be appropriately

¹⁷ Aerosol Association, data collated from Statistics NZ, Euromonitor and Nielson

¹⁸ Appendix I: Assumptions for deriving single-use container volumes and weight, of NZCRS. 2020. [The New Zealand Container Return Scheme Design – Appendices](#). NZ CRS Project Team for the Ministry for the Environment.

¹⁹ See Packaging Forum summit slides 2024 on mass balance.

managed. It is crucial not to transfer risk from MRFs to metal recyclers or from professional waste management companies to individual consumers – whether through retail drop-off locations or private vehicle transport of household aerosols.

Collection

If aerosols are included in kerbside collections, there'll need to be a balance between convenience and efficiency, and risk. Standardisation moved aerosols from recycling to refuse; but eliminating aerosols from kerbside systems is impractical, as both recycling and refuse trucks compact them, posing similar risks during transport. The risks in aerosol collection are around the potential for truck fires as part of an accumulation effect with batteries, electronic devices and gas bottles and canisters.

Creating a separate take-back system for household aerosols is not recommended by overseas best practice and guidance from the Association of Metal Recyclers (AMR), because concentration of aerosols together in a receptacle is higher risk than aerosols being blended into the general recycling with other materials.²⁰

The group has collated information from members of EXPRA and the UK association Alupro to understand how aerosols are safely collected in other countries. Where kerbside collection systems are in place, the rationale is using dilution to deliver the solution. Potential take back systems under investigation include transfer stations, hazardous chemical sites, community recycling, metal recyclers, commercial collectors.

Sortation

Across New Zealand there are a range of sortation systems, from manual operations to automated MRFs. This may mean solutions used for safe handling of aerosols at MRFs in other countries need to be adapted for New Zealand. Aerosols at MRFs may undergo manual screening for removal. Risks include potential discharge pre- or post-baling, which can be mitigated through isolation, shrouding, and guarding of equipment. A subgroup developed a questionnaire based on overseas safe handling guidance for MRF operators.

Responses from seven companies, representing 21 MRFs, and servicing 77 percent of the population, are summarised in Table A3.2.

Table A3.2: Summary of responses from MRFs

Question	Yes	MRFs responding (%)
Do you complete regular MRF personnel monitoring re working in the air environment?	14	67
What conditions are monitored?		
• dust/silica	19	90
• CO2	11	52
• VOC	7	33
• noise	11	52

²⁰ British Aerosol Manufacturers Association. 2025. [The BAMA guide to recycling empty aerosols from industrial, commercial and institutional sites](#). London: BAMA.

Question	Yes	MRFs responding (%)
Have aerosols ever been accepted at this MRF?	4	43% of the population
Does your MRF have a metal container baler?	15	71
Is the baler a vented compression baler?	14	67
What fire protection systems does your MRF currently have?		
• fire hoses	14	67
• fire extinguishers	21	100
• sprinkler systems on unload area	14	67
• sprinkler systems and/or smoke curtains in MRF conveyor area	12	57
• fire protection systems at baler eg VOC ventilation, hydraulic fluid shut off	1	5
• thermal detection systems to provide early warning of fire	3	14
• water cannons	0	0
• sprinklers and or smoke curtains in baled product storage area	13	62
Is your MRF currently insured by a 3rd party?	21	100

The group also asked questions about capital upgrades required to safely accept aerosols. Further work is needed to determine each MRF's requirements; only the Auckland Re-group MRF has everything except water cannons in place.

End market requirements

There are two pathways for cans, including aerosols, to be sold into overseas end markets.

- Metal recyclers process various cans from consumers or MRFs, re-bale them, and grade the metal for end market placement. According to the Association of Metal Recyclers (AMR), there are markets for both aluminium and steel aerosols.
- MRF operators bale materials into larger, less compact UBC bales for export.

Specifications for steel and aluminium cans are based on Institute of Scrap Recycling Industries (ISRI) specifications. The AMR has discussed bale quality with aluminium buyers, and there is little difference in price for UBC bales containing aerosols. The pricing for bales from MRFs (Taldack) was US\$1,630 per tonne, compared to US\$1,650 for metal recycler bales (Taldon).²¹ Aluminium aerosols in the mix are not considered an issue, as it is expected the number present will always be very low.

From the survey responses, only one of the seven recycling organisations expressed concern about lost value. The other six did not expect UBC prices to be impacted.

Based on the available data, the financial impact would be around 1 percent for aluminium, and there is no differential pricing for steel bales with or without aerosols.

²¹ Prices at the week commencing 7 April 2025.

Table A3.3: Amount and recovery value of aerosols and can packaging sold in New Zealand

Tonnes placed on market	Aluminium	Steel	Total
Aerosols	414	386	801
Cans	8,474	12,995	21,469
Recovery %	45% ²²	70% ²³	
Recovered tonnes	4000	9,367	13,367
Revenue estimates			
Without aerosols	US\$ 1,650/tonne	No differential ²⁴	
With aerosols	US\$ 1,630/tonne	No differential	
Revenue differential	US\$ 79,966	No differential	
Recovery value of aerosols placed on the market	US\$ 675,000		

Part 1: Problem definition

Context

There are limited options to redesign or substitute materials to reduce aerosols in the supply chain. Aerosols are recyclable and there is an established market for them.

Standardisation has removed household and personal care aerosols from recycling collections without providing alternative recovery options, which leads consumers to either dispose of them as waste or mistakenly place them in the recycling stream. This confusion is added to by international labels. In the UK, 75 percent of councils accept aerosols in kerbside collections, which is expected to rise to 100 percent by 2026 under Simpler Recycling. Australia, except Western Australia, also accepts aerosols in kerbside collections and is considering mandating inclusion via the Department of Climate Change, Energy, the Environment and Water's (DCCEEW's) Reforming Packaging Regulations. Excluding aerosols from kerbside recycling has shifted the improper disposal risk more towards kerbside rubbish collection rather than mitigating the risk, emphasising the need to separately address implementation costs and funding solutions.

Issue

An estimated 16.6 million household and personal care aerosols and 9.1 million other aerosols (paint, hazardous, etc) are consumed in New Zealand annually, without clear guidance on how these should be disposed of. The aerosol format is used for a range of personal and household products because they are convenient, hygienic and precise, with controlled spray mechanisms.

For brand owners bringing products into New Zealand, because our market is small, having to use different labels or mark products as not recyclable here (even if they are overseas, and may be marked as such) could put them off selling in New Zealand. This might limit the range of products like hairsprays, shaving foams and deodorants available here.

²² Ministry for the Environment. 2022. [Transforming recycling: Consultation document](#). Wellington: Ministry for the Environment.

²³ Packaging Forum Valpak mass balance research 2024.

²⁴ Association of Metal Recyclers. Pers. Comm. Steel bale buyers May 2025

Aerosols will remain in our system as they cannot be substituted. Unlike in the UK, Europe, Canada, and Australia, the risk has shifted from recycling collectors to waste collectors, metal recyclers, or drop-off systems. Aerosols remain part of kerbside collections, with increased volumes in refuse collections. The resource recovery sector still manages aerosols in recycling systems, though volumes have decreased due to kerbside standardisation.

An important issue are small gas canisters, which can come in aerosol form but are largely found in small steel containers. While they're typically not aerosols, they do cause fires in steel balers. Since July 2024, the Auckland MRF has experienced at least six of these fires, all linked to these canisters, while no fires have occurred in aluminium balers. None of the fires have been directly attributed to aerosols. After each fire, bales are examined to determine the cause.

Battery fires, although a significant issue in MRF operation, are most likely to occur before processing or where trucks tip, because there is the required fuel to start a fire (that is, recyclables). A battery typically has a plastic coating, so Auckland MRF believes they are unlikely to be caught in a steel baler.

Objective

The subgroup looked at the challenges of aerosol packaging collection and recovery. The goal is to make sure that we recover as many resources as possible, while protecting the health and safety of plant, equipment, and personnel.

Summary of risk mitigation

Changing how aerosols are disposed of needs clear and simple messaging for the public. The system must be easy for people to use, and also work well with the resource recovery sector. Other countries have done this through consumer education, making sure only **empty** personal care and household aerosols are recycled.²⁵ Standardised labels can help keep aerosol recycling messages consistent with overseas markets.

We need to identify the costs of managing the recovery of aerosols, and put funding streams or solutions in place. Material recovery facilities can be adapted to reduce the risks of discharges from aerosols during storage and processing.

Acceptance criteria can also help with managing risk. For example, only household and personal care aerosols should be included in the kerbside collection system, not non-hazardous aerosols.

Making changes to manage the risks of recovering aerosol packaging will need extra funding, as the value of the packaging materials will not be enough to cover these costs.²⁶

The subgroup has considered the questions in Table A3.2 below.

²⁵ AluproUK. *When is an aerosol empty and ready to recycle?* Accessed at <https://www.youtube.com/watch?v=dRfkXS-o-fU> on 20 July 2025.

²⁶ See Appendix 3.1 – Source materials.

Table A3.2: Questions considered by subgroup on aerosols

Question	Activity	Current status
Is it possible to mitigate the risk at point of collection – is the risk from collection in a recycling truck any different to the risk in the rubbish truck?	Fire risk identified as the main hazard for aerosol reintroduction, as part of an accumulation effect with batteries. The risk remains for rubbish trucks as for recycling trucks.	
Is it possible to mitigate the risk at the sortation plant?	Fire risk identified as the main hazard for aerosol reintroduction, as part of an accumulation effect with batteries. Review of overseas guidance on safe handling. See sources. Verbal responses from 21 MRF operators have been collated in response to: • personnel monitoring eg, dust, fibres, CO2, VOC • H&S systems in place • fire protection systems • baler ventilation • insurance • capital upgrade requirements.	67% of the MRFs conduct some personnel monitoring systems, whether frequently or as a baseline. 67% have a vented baler for metals. 100% have fire extinguishers. 67% have hoses and sprinkler systems There are no water cannons.
How much would infrastructure upgrade investment cost?	Included in questionnaire.	Costs TBC
What are commercial barriers – lower value of aerosols?	Further investigation with overseas buyers finds UBC containing aerosols has an impact of around \$20 per bale (bale price average of \$1630/tonne).	Area of concern for MRF operators but not impacting prices. The sub-group agreed that based on the available data, the financial impact would be around 1% for aluminium and there is no differential pricing for steel bales with or without aerosols.
Is insurance a factor and what can be done about it?	Insurance premiums are increasing. The Waste and Recycling Industry Forum (WRIF) has sought advice from the Insurance Council. Recommended mitigation measures: • Automatic Fire Sprinklers with a minimum design to NZS 4541:2020 Ordinary Hazard Group 3 Special (OH3S) criteria, except for ceiling heights up to 6m the minimum design density discharge shall be increased to 8.1mm/min (instead of 5mm/min). 14 MRFs have sprinkler systems installed already, whether they meet the above criteria would need to be checked. • Sprinklers installed above waste sorting conveyer belt systems. 12 MRFs have sprinkler systems installed over conveyors already. • Recommend there are at least two water monitors/cannons installed (manual or automatic), each capable of supplying 1,150 L/min, and positioned so they can reach any portion of the pile. No MRFs currently have water cannons installed. A Salvus Fire flame ranger auto water cannon system for a 50m x 30m RTS shed is \$320k capex.	All MRFS providing information have 3rd party insurance with concern about the escalating costs. Cumulative risk with effect of batteries. Seek further guidance from Fire and Emergency New Zealand (FENZ).

Question	Activity	Current status
	• Risks involving flammable or highly reactive materials (such as waste to ethanol, waste to energy, or lithium-ion batteries) require a detailed engineering review and it is strongly recommended to involve your insurer at an early stage in design. If aerosols are to be included as acceptable kerbside recyclables, a risk assessment and engineering plus insurance review of mitigations will be needed. • Heat detectors installed above waste sorting conveyer belt systems that are inside buildings. Three MRFs have thermal cameras/heat detection. Thermal cameras are approx \$2k each, plus install costs which can be more than the camera costs. • Firefighting hose reels: make water readily available. Firefighters will use it when they arrive, but you might also consider getting your people trained in their usage. 14 MRFs have hose reels. • Investigate the use of Smart Artificial Intelligence Cameras that can recognise lithium battery containing items and will signal an alarm allowing staff to safely remove such items.	
What are we asking consumers to do with their used household aerosols?	Current guidance is silent on this but will need to be resolved if risks are not just being shifted.	

Part 2: Options

What options have been considered, or discarded, and why?

The following options are being considered.

1. Reintroduction of empty non-hazardous²⁷ aerosols into kerbside, defining safe systems for collection and sortation.
2. Reintroduction of only empty non-hazardous household and personal care aerosols into kerbside, defining safe systems for collection and sortation
3. Do nothing – aerosols collected in household rubbish and sent to landfill.
4. Take back through a different system (to be determined).

Table A3.3: Options analysis for aerosols

#	Option	Considerations	Risk mitigation
1	Reintroduction of empty non-hazardous aerosols into kerbside defining safe systems for collection and sortation	75% councils in the UK (to become 100% under Simpler Recycling) and every state in Australia except WA accept aerosols in kerbside. In Australia only aerosols labelled Schedule 6²⁸ poisons (including caustic oven cleaners and some insecticides) are excluded. - Despite standardising recycling, MRFs are still receiving aerosols and, therefore, will need to manage the risk. - If aerosols are not collected in kerbside recycling, they are captured in rubbish trucks, with similar risks at point of collection. - Review of MRF H&S systems. Initial findings are that: 14 MRFs complete air monitoring for personnel 14 have vented balers; only Auckland has a VOC remover 14 of the MRFs have sprinkler systems; none have water cannons 4 MRFs have accepted aerosols in the past, servicing 43% of New Zealanders. - Insurance risk, which is part of accumulated risk with batteries.	Fire risk identified as the main hazard for aerosol reintroduction, as part of an accumulation effect with batteries. Including consideration of batteries in the risk mitigation work. Fire protection and improvement in baling would be the main areas for improvement. Guidance for recyclers. A comprehensive information kit for MRFs and others handling post -consumer recycled aerosols on how to safely handle and process them (based on international practice). Better guidance for consumers. Reintroduction at kerbside would need to be accompanied by a consumer education campaign to reinforce that full and partially full aerosol, camping and butane gas canisters and those marked as a “Poison” should not be put into the recycling or waste stream and instead be disposed of as hazardous waste. Leverage UK consumer research and education pathway.

²⁷ Excluding those marked “poison”.

²⁸ Australian Government Department of Health, Disability and Ageing. *The Poisons Standard (the SUSMP)*. Accessed at www.tga.gov.au/how-we-regulate/ingredients-and-scheduling-medicines-and-chemicals/poisons-standard-and-scheduling-medicines-and-chemicals/poisons-standard-susmp on 20 July 2025.

#	Option	Considerations	Risk mitigation
2	Reintroduction of only empty household and personal care aerosols into kerbside, defining safe systems for collection and sortation	- This would address 16.1 million aerosols from the personal and household care and food categories. Considerations as for #1: - Are empty household and personnel aerosols actually flammable? Degrees of flammability and risk, but lower than for #1 where all aerosols are accepted. - Exclude aerosols labelled Schedule 6²⁹ poisons (including caustic oven cleaners and some insecticides) are excluded. - Limiting aerosols to be accepted at kerbside, with a clear consumer education campaign, would reduce the risk from receiving spray paint, aerosols used in garages etc. - Aerosols not accepted will need a pathway defined for them.	Only empty household and personal care aerosols. Leverage UK consumer research and education pathway.
3	Do nothing – aerosols collected in household rubbish and sent to landfill	- Fire risk remains for waste collection trucks. - Safe collection/drop-off systems are not defined so risk is transferred not resolved. - Insurance risk, which is part of accumulated risk with batteries.	
4	Take back through a different system eg <i>transfer stations, hazardous chemical sites, community recycling, metal recyclers, commercial collectors</i>	- The international experience and published safety studies demonstrate that the safest and most sustainable model for recycling aerosols is as part of the kerbside collection stream (ie, mingled with – and hence diluted by – other metal packaging). - Insurance risk, which is part of accumulated risk with batteries. - Metal Recyclers can accept aerosols	

²⁹ Australian Government Department of Health, Disability and Ageing. *The Poisons Standard (the SUSMP)*. Accessed at www.tga.gov.au/how-we-regulate/ingredients-and-scheduling-medicines-and-chemicals/poisons-standard-and-scheduling-medicines-and-chemicals/poisons-standard-susmp on 20 July 2025.

Recommendations

Further work is underway to identify whether Option 4 is feasible or effective. It is also likely that a take back system may be required for non-household or personal care aerosols.:

- What take-back systems could be considered – for example, transfer stations, hazardous chemical sites, community recycling, metal recyclers, commercial collectors?
- What safety considerations would need to be addressed to consolidate aerosols in one place?
- How would households safely store aerosols before any take back?
- How effective would this be in recovering materials from households?

What is the preferred option? Option 2

Based on current work, the preferred option is to allow some aerosols back in kerbside recycling. This would include personal care products, and kitchen aerosols such as spray oils and cream, but not those with caustic or carcinogenic qualities, such as oven cleaners. Based on UK guidance, aerosols should be identified by product groups eg hair spray, deodorants, spray cans rather than a generic term.

This is quite a narrow range of items to be included, so an education and engagement programme is strongly recommended to run with their reintroduction. This should be supported by a user-friendly tool like Australia's Recycle Mate to identify which aerosols can and cannot be recycled. Overseas guidance is also to conduct trials of the preferred pathway (s) prior to national integration.

Risks raised by MRF operators will need to be addressed in a pragmatic way, focusing on:

- baling operations
- air quality, such as VOCs
- combustibility of products – that is, some aerosols are more combustible than others.

Appendix 3.1: Resources to support aerosols RLF work programme

Workplace safety

British Aerosol Manufacturers Association. 2025. [The BAMA guidance for MRF operators](#). London: BAMA.

UK guide providing health and safety guidance for inclusion of post-consumer aerosols in recycling schemes, including advice on ventilation, baling, can-flattening and zoning.

British Aerosol Manufacturers Association. 2025. [The BAMA guide to recycling empty aerosols from industrial, commercial and institutional sites](#). London: BAMA.

A guide providing advice on the safe disposal of empty aerosols in industrial, commercial and institutional environments.

Smith DN, Linton D. [Health and safety issues in post-consumer aerosol container recycling](#). In *Resources, Conservation & Recycling* 31 (Feb 2001) 253-263
<https://www.sciencedirect.com/science/article/abs/pii/S0921344900000835>

Smith DN, Simmons JB, Jefferson MD, Jackson P, Barney M. [The use of can flatteners in MRFs for processing materials including post-consumer aerosols – a risk assessment](#). In *Resources, Conservation & Recycling* 31 (Feb 2001) 115-134

New Zealand guidance

Worksafe. 2025. [Workplace exposure standards and biological exposure indices](#). Wellington: Worksafe.

This refers to aerosols but with the meaning of “particles suspended in the air, including dust and mist etc” not aerosol products.

Globally Harmonised System (GHS) is an international hazard classification system for chemicals created by the United Nations. The hazards are communicated on labels and safety data sheets including how to safely store, use and dispose of chemicals. [About the GHS | UNECE](#).

New Zealand’s hazard classification system. Accessed at www.epa.govt.nz/hazardous-substances/classification/new-zealands-hazard-classification-system/ on 20 July 2025.

Note that while workplace health and safety legislation is based on the GHS, cosmetics are pretty universally exempt from GHS labelling and while New Zealand’s HSNO legislation is also based on the GHS, the ‘alternative compliance provisions’ of the legislation mean goods legally labelled for countries like the US and Australia (which do **not** require GHS labelling on consumer/retail products), are deemed to comply.

Refer: Hazardous Substances (Hazard Classification) Notice 2020

Cosmetics Product Group Standard 2020 HSR002552 (consolidated and effective 1 January 2026)

Storage and disposal of waste aerosols

New Zealand guidance

Environmental Protection Authority. 2020. [Aerosols \(Flammable\) Group Standard 2020 HSR002515](#). Wellington: Environmental Protection Authority.

Aerosols can be recycled provided they are handled in accordance with the relevant recycling processes.

Disposal

(1) Subject to subclauses (2) and (3), substances covered by this Group Standard must comply with the relevant provisions of the Hazardous Substances (Disposal) Notice 2017.

(2) Despite clause 13 of the Notice—

- i) an aerosol dispenser that may or may not contain any residual substance may be disposed of in a landfill provided clauses 7(3), 9 and 10 of the Notice are complied with;
- ii) a householder or consumer may supply an aerosol dispenser that may or may not contain any residual substance to a public or commercial waste collection service for disposal.

(3) The requirements of the Notice do not apply to an aerosol dispenser that may or may not contain any residual substance if it is intended for recycling.

UN guidance

Waste aerosols are covered by a special provision SP 327 in part 3.3, which states:

"Waste aerosols consigned in accordance with 5.4.1.1.3 may be carried under this entry for the purposes of reprocessing or disposal. They need not be protected against inadvertent discharge provided that measures to prevent dangerous build-up of pressure and dangerous atmospheres are addressed. Waste aerosols, other than those leaking or severely deformed, shall be packed in accordance with packing instruction P003 and special provision PP87, or packing instruction LP02 and special packing provision L2. Leaking or severely deformed aerosols shall be carried in salvage packagings provided appropriate measures are taken to ensure there is no dangerous build up of pressure."

UK guidance

Environment Agency. 2011. [Guidance for the storage and treatment of aerosol canisters and similar packaged wastes](#). Bristol: Environment Agency.

Aerosol Storage SGN 5.06

Most aerosols contain materials which are a low hazard to the environment, indeed most are intended to release their contents just about anywhere. The risks if any, come mainly from fire which spreads to involve other materials. Aerosol cans are thin and will rust through quickly in the open air. If a fire starts in a stack of boxes, it can be expected to spread quickly, with canisters ejected as they overheat. Some distribution sites place them in cages to prevent 'missiles'. Indoor storage should be employed, to restrict the rate of rusting, and missile risk. An assessment should be undertaken to ensure that land around the store contains nothing that would be expected to be ignited by the contents of an ejected burning can, and to prevent fire spread by radiant heat on an adjacent stack if containment is compromised.

Storage of aerosols should take place under cover in closed containers or cages. Aerosols should not be stored in open containers.

Figure 2 - Examples of containers used for on-site storage:



Steel safe/IBC

- ✓ Containment of canisters and liquid residues
- ✓ Adequate ventilation if designed with high and low level louvres
- ✗ Limited visual inspection
- ✓ Easily earthed
- ✓ May meet ADR requirements



Steel cage

- ✓ Containment of canisters and liquid residues if provided with lid and solid tray base
- ✓ Good ventilation
- ✓ Better visual inspection
- ✓ Easily earthed
- ✗ May not meet ADR requirements



Adapted plastic IBC

- ✗ Poor containment of canisters
- ✗ Poor low level ventilation
- ✗ Limited visual inspection
- ✗ Not easily earthed
- ✗ Unlikely to meet ADR requirements

Recycling guidance

Australian guidance

Communications to households refer to the Australian Poisons Schedules and advise consumers not to put “poisons” in the recycling or waste.

Using this as a yardstick, this would apply to some caustic oven cleaners and pest control products (including non-aerosol formats) that would fall under [Schedule 6](#) of the Australian Poison Standard.

Australian Government Department of Health, Disability and Ageing. *The Poisons Standard (the SUSMP)*. Accessed at www.tga.gov.au/how-we-regulate/ingredients-and-scheduling-medicines-and-chemicals/poisons-standard-and-scheduling-medicines-and-chemicals/poisons-standard-susmp on 20 July 2025.

European Aerosol Federation (FEA) product safety guidance

Aerosol containers are generally made from steel or aluminium – recyclable materials with established market demand. Recycling is FEA’s preferred route to recover the value of used (that is, empty) aerosols. FEA advocates that empty aerosols should be included in recycling schemes. The current recycling trend shows that empty aerosols can be included safely in the normal household waste packaging stream. As a result, large numbers of post-consumer aerosols are already being recycled successfully around the world.

The following key points summarise the current situation concerning empty aerosols in the household packaging waste stream:

- All aerosols in the household packaging waste stream are consumer products (of which 70 percent are personal care).
- Only two aerosol cans are found in 1 m³ of mixed packaging waste.
- For the majority of empty aerosols, the residual contents are less than 3 percent by weight
- During waste collection, transport and handling at the material recycling facilities (MRFs), the risk of fire or explosion from empty aerosols is low and readily manageable unless they are concentrated by separate collection.
- Empty aerosols sorted from the total metals fraction of waste at the MRF represent less than 5 percent by weight out of all metal containers, such as cans for beverages, food, pet food.