Ministry for the Environment
PO Box 10362
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New Zealand

1 May 2022

Re: Transforming Recycling Submission

Container Return Scheme: A Missed Opportunity for a Reuse Scheme

1. Introduction

We, the undersigned Global and National Environmental Leaders and New Zealand Food and Beverage companies, submit that the Ministry for the Environment Manatū Mō Te Taiao (MfE) should fully investigate and pilot a centralised reuse scheme that could run alongside the proposed Container Return Scheme (the **CRS**). A reuse scheme would involve the washing, sanitising, de-labeling and return of bottles and possibly other containers to producers, to complement and enhance the CRS.

We propose that to fully realise MfE's vision of a circular economy, it is imperative to conduct a pilot that includes the financial and environmental analysis that compares the true cost of recycling to a reuse scheme. This pilot and subsequent analysis should include but not be limited to:

- greenhouse gas emissions;
- energy;
- water;
- cost of resources (glass, plastic, cardboard), whether virgin or recycled;
- cost of manufacturing containers including the increasing cost of fossil fuels;
- increasing cost of freight associated with importing containers and exporting used containers for recycling; and
- international agreements relating to recycling as set out in the Basel Convention, commitments to United Nation SDG 12, and the proposed United Nations Resolution to End Plastic Pollution through an Internationally Legally Binding Instrument.[1]

The CRS as currently proposed will decrease littering in New Zealand and increase recycling rates.[2] This is an important step given New Zealand has low recycling rates compared to other countries.[3] However, the proposed CRS is the worst of the environmentally friendly options available. Implementing a return scheme without providing for a reuse scheme - a centralised system to wash, sanitise, de-label and return bottles to producers - is a missed opportunity.

This submission will set out the benefits of implementing a reuse scheme alongside the CRS. First, a reuse scheme provides economic advantages to beverage producers and to the New Zealand taxpayer. Secondly, a container return scheme that incorporates a reuse scheme better aligns with core goals for Aotearoa, including:

[1] United Nations Environment Assembly of the United Nations Environment Programme, *Draft resolution End plastic pollution: Towards an international legally binding instrument,* 2022, https://wedocs.unep.org/bitstream/handle/20.500.11822/38522/k2200647_-_unep-ea-5-l-23-rev-1_-_advance.pdf?sequence=1&isAllowed=y

[2] Ministry for the Environment, *Transforming Recycling Consultation document*, 2022 at 8. https://environment.govt.nz/assets/publications/Transforming-recycling-consultation-document.pdf

[3] *Ibid.*

- a circular economy;[4]
- a net-zero carbon economy as set out in the Climate Change Response (Zero Carbon) Amendment Act 2019;[5] and
- reducing plastic in accordance with the Government Response to the Rethinking Plastics Report and international agreements.[6]

Further, a reuse scheme – as other nations are demonstrating as they shift to a reuse model -- can be extended beyond beverage containers for the benefit of food companies. Finally, if New Zealand implements a reuse scheme alongside the CRS it can be seen as a blueprint on the world stage, amplifying New Zealand's green image. Reuse is a best-in-class example of a circular economy.

2. What is a reuse scheme?

A reuse scheme provides centralized infrastructure for cleaning, sanitising and de-labelling used glass and plastic bottles and returning them to producers for refilling.

New Zealanders born before 1990 are familiar with a reuse scheme that operated nationally for a traditional staple: milk. In just 30 years we have transitioned to single use. A similar trend from reusable packaging towards single use has occurred in all countries due to strong industry lobbying efforts opposing reuse legislation.[7] However, the proposed CRS provides an important opportunity to transition back. The proposed CRS incorporates most of the fundamentals to get a reuse scheme off the ground:

- funding for operations from beverage producers;
- infrastructure for beverage container collection and sorting;
- financial incentives for beverage producers to consider options beyond single use; and
- higher rates of return, which increases pressure for New Zealand to take responsibility for our used containers, particularly as offshore recycling regulations tighten.

Germany has run a successful container return scheme for over 20 years.[8] It is the global leader in recycling and reuse and should be the example that New Zealand turns to for learnings. In Germany 98% of beverage containers are returned and 57% are reused. Glass bottles are reused up to 50 times before losing quality and PET plastic up to 25 times.[9]

3. Economic advantages of a reuse scheme

A reuse scheme provides economic advantages for New Zealand beverage producers and New Zealand tax payers.

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[4] *Ibid.* at 16.
[5] Ministry for the Environment, Climate Change Response (Zero Carbon) Amendment Act 2019, https://environment.govt.nz/acts-and-regulations/acts/climate-change-response-amendment-act-2019/
[6] Ministry for the Environment, *Rethinking Plastics in Aotearoa New Zealand*, 2020 https://environment.govt.nz/assets/Publications/Files/Government-response-to-the-Rethinking-Plastics-report.pdf; United Nations Environment Assembly of the United Nations Environment Programme, *End plastic pollution: Towards an international legally binding Instrument*, 2022 https://wedocs.unep.org/bitstream/handle/20.500.11822/38522/k2200647_-_unep-ea-5-l-23-rev-1_-_advance.pdf?sequence=1&isAllowed=y
[7] Patricia Megale Coelho, Blanca Corona, Roland ten Klooster, Ernst Worrell, *Sustainability of reusable packaging–Current situation and trends, Resources, Conservation & Recycling:* 2020, https://doi.org/10.1016/j.rcrx.2020.100037. (https://www.sciencedirect.com/science/article/pii/S2590289X20300086)
[8] Tamsin Walker and Jennifer Collins, *How does Germany's bottle deposit scheme work?* DW Made for Minds, https://www.dw.com/en/how-does-germanys-bottle-deposit-scheme-work/a-50923039
[9] *Ibid.*

The proposed CRS excludes reusable containers. We propose that reusable containers should be included in the scheme and that the same fees and costs should be applied i.e. 20c per container provided as a returnable deposit and up to 8c per container for operating costs. This financial model ensures that reusable containers are returned and also ensures that beverage producers are contributing to the cost of a reuse scheme. This model provides several economic advantages over the proposed CRS:

- A reuse scheme will be cheaper for New Zealand beverage producers because containers can be reused rather than purchased. For many beverage producers, bottles are more than 20% of the total cost of goods. This is only set to increase as the cost of resources, and in particular plastic, made from fossil fuels, increases.

- A reuse scheme is likely to use less taxpayer dollars in the long term because:

    - Regulations around recycling are tightening, meaning that it will become more expensive to ship recycling offshore as New Zealand presently does.

    - Recycling is fossil fuel intensive due to the high-infrastructure and high-energy processes. The cost of washing and sanitising bottles will become proportionately cheaper in the next decade as the cost of fossil fuels increases.

- Participating beverage producers will own a sustainability story to share with consumers. Increasingly consumers, employees and investors are attracted to purchasing from, working with and investing in sustainable companies.[10]

- Participating beverage producers will enjoy long-term savings as the true cost to the environment, including the carbon associated with recycling and manufacturing new bottles, is incorporated into container costs.

- A centralized reuse scheme can be used as a blueprint for best practice beverage container schemes globally. This will attract positive PR that participating beverage companies can leverage and will ultimately lift New Zealand's green image on the world stage.

4. Environmental advantages of a container reuse scheme.

a. A reuse scheme is consistent with a circular economy.

There are significant environmental advantages of introducing a container reuse scheme. Firstly, the primary goal of the Container Return Scheme is to support New Zealand's transition to a circular economy. A circular economy is an economy where products and materials are reused at their highest value.[11] The 9 r's framework set out in the diagram to the right is the common method of understanding the circular economy used by academics globally. Reuse is one of the best options while recycling is one of the worst.[12]

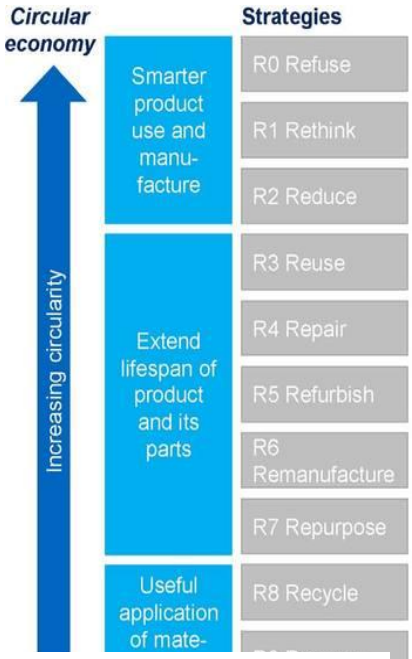
[10] Bothello, T. R. (2020). *Why "Degrowth" Shouldn't Scare Businesses. The insights you need on Climate Change.* Harvard Business Review, 83-93.

[11] Ellen MacArthur Foundation, *What is a Circular Economy, https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview*

[12] Julian Kirchherr, Denise Reike, Marko Hekkert, *Conceptualizing the circular economy: An analysis of 114 definitions*, Resources, Conservation and Recycling, Volume 127, 2017, p. 221-232, https://doi.org/10.1016/j.resconrec.2017.09.005.

Recycling is misaligned with a circular economy because it begins at the end: recycling is the best way to 'get rid' of a product at the end of its lifecycle. By contrast, a circular economy starts at the beginning - how can we avoid the waste and pollution from being created in the first place. In the current environmental crisis faced by Earth, recycling is not enough to overcome the amount of waste that we produce.[13] As provided by the World Economic Forum:

> *"In a properly built circular economy, one should rather focus on avoiding the recycling stage at all costs. It may sound straightforward, but preventing waste from being created in the first place is the only realistic strategy."*[14]



The 9 R's Framework

The proposed CRS will improve recycling rates. However, this does little to prevent waste from being created in the first place. As provided in the Global Commitment 2021 Progress Report from the United Nations Environment Programme and the MacArthur Foundation:

> *"progress has largely been driven by recycling, but that is not enough to solve plastic pollution – much more focus is urgently needed on eliminating single-use packaging."*[15]

New Zealand ships most of its recycling offshore which adds multiple environmental and financial impacts that are on track to intensify for a number of reasons:

- Shipping recyclables offshore adds significant carbon miles.

- Recycling offshore lacks transparency and is increasingly being perceived, on the world stage, as shifting responsibility.[16] The Transforming Recycling Consultation document demonstrates that a significant amount of collected recyclable material is exported to Malaysia, Indonesia, Vietnam and Thailand.[17] Investigative reports show that massive amounts of material imported for recycling in Southeast Asia are discarded or burned. [18] For example, in Malaysia and Indonesia, various investigations have evidenced that plastic imported for recycling is mis-managed through being burned or disposed in landfill at rates between 25% and 75% of the time.[19] In Vietnam, reports show that 64% of plastic waste imported for recycling is mis-managed. [20] Similarly in Thailand, 61% of plastic waste imported for recycling is mismanaged.[21] While these statistics do not apply to all recycling they are a reflection of the lack of transparency in global recycling systems.

[13] Ellen MacArthur Foundation *supra* note 10.
[14] World Economic Forum, *For a true circular economy, we must redefine waste*, SDG 12: Responsible Consumption and Production, 2019, https://www.weforum.org/agenda/2019/11/build-circular-economy-stop-recycling/.
[15] United Nations Environment Programme and Ellen MacArthur Foundation, *The Global Commitment 2021 Progress Report*, *https://emf.thirdlight.com/link/n1ipti7a089d-ekf9l1/@/preview/1?o*
[16] Eskeland, G. S., & Ann E. Harrison. (2003). *Moving to Greener Pastures? Multinationals and the Pollution Haven Hypothesis*. Journal of Development Economics, 1–23.
[17] Ministry for the Environment, *supra* note 1.
[18] Kara Lavendar Law, *The United States' contribution of plastic waste to land and ocean,* 2020, Science Advances, https://www.science.org/doi/10.1126/sciadv.abd0288
[19] *Ibid*.
[20] *Ibid*.
[21] *Ibid*.

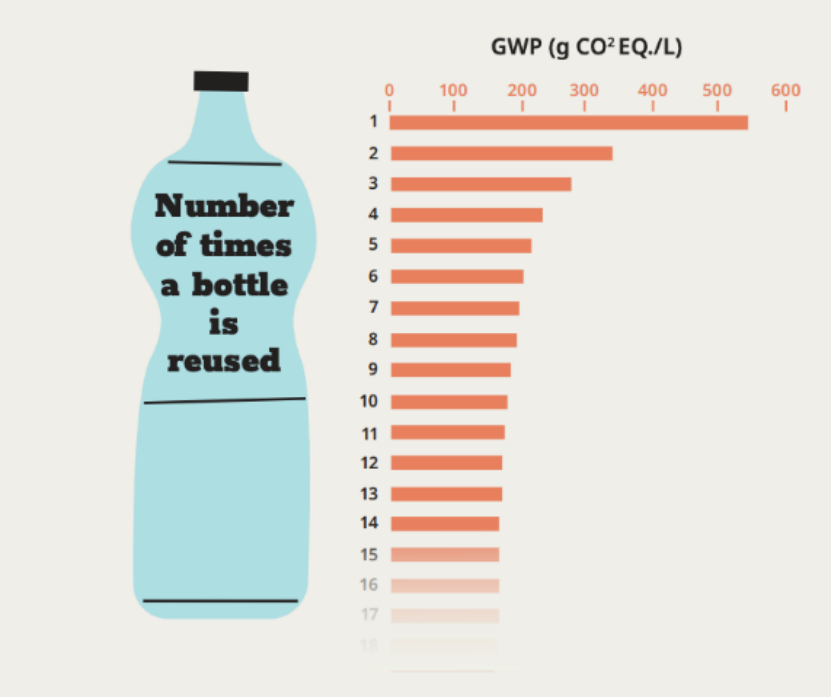
- Due to the lack of transparency in the recycling industry, regulations on importing recyclables are tightening. [22] Today, these regulations apply to plastic but in the future similar restrictions will likely apply to other beverage-container materials.

- Global supply chains are becoming increasingly complex. These issues began with Covid-19 but are expected to continue and will make shipping recyclables offshore more expensive.

In summary, a reuse scheme that returns used bottles to refill aligns with the circular model and avoids the many financial and environmental impacts associated with recycling.

b. A reuse scheme aligns with New Zealand's goal to reduce greenhouse gas emissions

A second goal of the CRS is to transition to a low carbon (CO2) economy. A reuse scheme will reduce greenhouse gas emissions to a far greater extent than the proposed return scheme.
Significant research has been conducted on the life-cycle analysis (**LCA**) of beverage containers.[23] An executive outline summarizing reusable packaging vs single-use packaging (including packaging that is recycled) across 32 LCAs shows that the CO2 emissions of a reusable glass bottle are 85% less than single-use glass. The CO2 emissions of an HDPE bottle are 65% less than a single-use HDPE bottle.[24] As provided in the *"Number of times a bottle is reused"* diagram to the right, the more times a bottle is used, the more CO2 emissions decrease.



Number of times a glass bottle is reused and the decrease in Global Warming Potential g CE eq/l

Glass has an important role to play. The Container Return Scheme Interim Regulatory Impact Statement incorrectly states that glass packaging is carbon intensive.[25] This statement fails to consider a systems view. Producing new glass is more energy intensive than producing new plastic, and glass is much heavier to transport than plastic or aluminum. However, when refilled or reused three times, glass is more carbon-

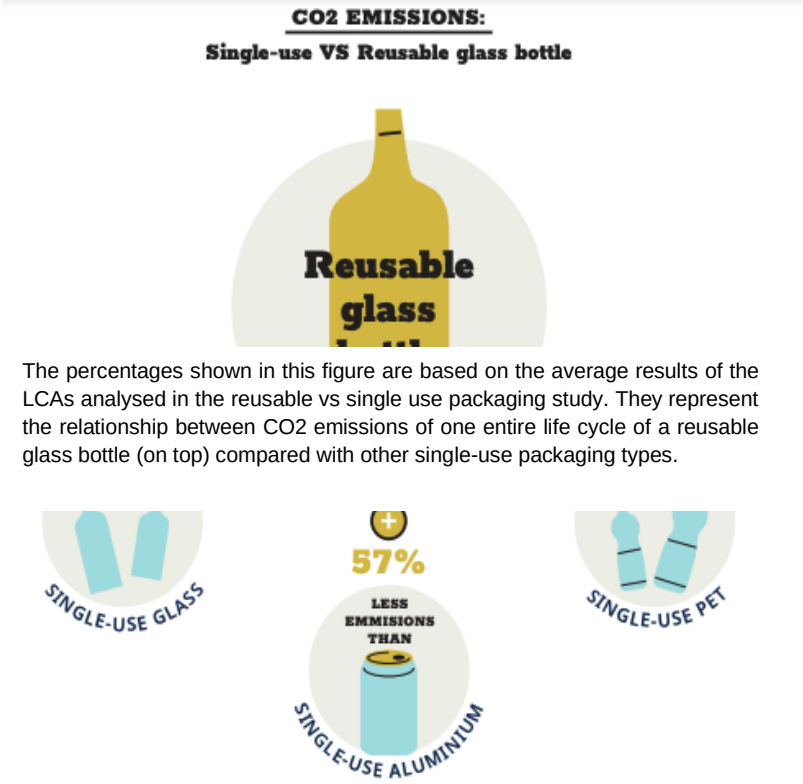
[22] United Nations Environment Assembly of the United Nations Environment Programme, *Supra* note 1.

[23] Patricia Coelho, Blanca Corona, Ernst Worrell, *Reusable vs Single-Use Packaging: A Review of Environmental Impacts*, 2020 https://zerowasteeurope.eu/wp-content/uploads/2020/12/zwe_reloop_executive-summary_reusable-vs-single-use-packaging_-a-review-of-environmental-impact_en.pdf
[24] *Ibid.*
[25] Ministry for the Environment, *Interim Regulatory Impact Statement*, 2022, https://environment.govt.nz/assets/publications/Interim-regulatory-impact-statement-A-container-return-scheme-for-Aotearoa-New-Zealand.pdf

friendly than any container packaging options available in New Zealand and has been labeled by waste experts internationally as the 'hidden gem' in a carbon neutral future.[26] This sentiment is reiterated by waste reduction experts in New Zealand.[27]

As it currently stands the CRS provides no incentive for beverage producers to choose recycled material containers over virgin material containers. Given the CRS will increase costs to beverage producers; it could even encourage producers to use higher rates of virgin materials which are cheaper.

c. A reuse scheme aligns with New Zealand's' goal to reduce plastics.



The percentages shown in this figure are based on the average results of the LCAs analysed in the reusable vs single use packaging study. They represent the relationship between CO2 emissions of one entire life cycle of a reusable glass bottle (on top) compared with other single-use packaging types.

Thirdly, a reuse scheme is better aligned with New Zealand's goals to reduce plastic. The MOE's 2020 *Rethinking Plastic Report* laments that recycling plastic is not enough. The plastic waste crisis requires:

> *"that we reduce the generation of plastic waste at source, rather than focus all of our attention towards improving our recycling."*[28]

This standpoint mirrors New Zealand's international response to the plastic waste crisis.[29] Alongside 175 nations New Zealand recently committed to ending plastic pollution. As part of the proposed agreement, it may become illegal to send plastic offshore for recycling. This could leave New Zealand with a monumental amount of used plastic and limited options if we focus on recycling rather than reusing.

d. There is an opportunity for a reuse scheme to extend to food jars and other containers

A reuse scheme can be extended beyond beverage containers for the benefit of food companies. Food manufacturers in New Zealand including Raglan Food Co and J Friend & Co honey see the environmental benefits of transitioning to a circular economy that supports reuse, and are eager to take part in the scheme. If food manufacturers participating in the scheme are required to provide an operating cost in a similar way to beverage container producers, this will increase funding available for operational costs.

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[26] Nature Editorial, *Glass is the hidden gem in a carbon-neutral future,* The international journal of science, 4 November 2021 https://www.nature.com/articles/d41586-021-02992-8, and Patricia Coelho, Blanca Corona, Ernst Worrell, *Reusable vs Single-Use Packaging: A Review of Environmental Impacts,* 2020 https://zerowasteeurope.eu/wp-content/uploads/2020/12/zwe_reloop_executive-summary_reusable-vs-single-use-packaging_-a-review-of-environmental-impact_en.pdf

[27] Hannah Blundhardt, Liam Prince, *The Rubbish Trip: Helping humans walk the talk on zero waste,* 2018 http://therubbishtrip.co.nz/be-a-tirading-kiwi/sometimes-smashing-sometimes-crushing-the-story-of-glass-in-new-zealand/

[28] Ministry for the Environment, *Rethinking Plastics in Aotearoa New Zealand: Government Response to the Rethinking Plastics Report*, 2020 https://environment.govt.nz/assets/Publications/Files/Government-response-to-the-Rethinking-Plastics-report.pdf

[29] New Zealand is a signatory United Nations Environment Protection Agency "*End Plastic Pollution: Towards a legally binding instrument"* which encourages plastic reduction and circular economy approaches.

e. Other nations are shifting away from single use to reuse

Internationally, many countries are implementing reuse packaging legislation to reduce single use.[30] The European Union has enacted legislation to limit single-use packaging and many countries have implemented producer responsibility schemes.[31] These schemes go beyond recycling by mandating that producers account for a full LCA.[32] Environmental regulations in the European Union will shape global best practice, a concept coined as the 'Brussels Effect'.[33] If New Zealand implements a reuse scheme early, it can be used as an example on the world stage, amplifying our green image.

5. Costs and other negative impacts of a reuse scheme

A reuse scheme has several limiting factors that need to be considered.

- The costs of a reuse scheme could be substantial, particularly if the sanitising, de-labelling and washing are centralised. However, these costs are unlikely to outweigh the cost of purchasing virgin containers. Given that significant resources are being invested in the CRS, now is the opportune time to implement a centralized system that sits alongside the CRS. In addition, if the cost of participating in a reuse scheme is offset by the savings in purchasing containers, milk companies such as Fonterra and Synlait may be incentivised to participate. This would add significant funding to a centralised reuse system and improve return rates.

- Careful regulation will need to be implemented to ensure that washing and sanitising bottles meets health and safety standards. Regulations in Germany should be used as standards alongside local examples such as Oaklands Milk that uses glass bottles 'hundreds of times' before they reach end of life.[34]

- A reuse scheme would use water and energy, as water will need to be heated as part of the washing and sanitising process. Processes should be implemented to reduce water and energy, for example, by utilizing recycled wastewater where appropriate, and powering a reuse plant through solar or other renewable energy sources. More research is required to understand the exact quantities of water and energy that will be used. However, these should be compared to the water and energy used to manufacture new containers which are significant.[35]

- Beverage manufacturers will need to align their bottle shapes to reduce costs associated with sorting. Preferred bottle shapes could reflect recycled glass bottle options produced by Visy Glass to encourage producers to purchase recycled, New Zealand glass rather than virgin glass produced offshore. Companies that choose specialty bottle shapes could pay an extra fee to have those bottles sorted and separated.

[30] Patricia Megale Coelho, Blanca Corona, Roland ten Klooster, Ernst Worrell, *Sustainability of reusable packaging–Current situation and trends*, Resources, Conservation & Recycling: X, Volume 6, 2020, https://doi.org/10.1016/j.rcrx.2020.100037
[31] OECD, *Extended Producer Responsibility: A Guidance Manual for Governments,* 2001, *https://www.oecd-ilibrary.org/environment/extended-producer-responsibility_9789264189867-en*
[32] *Margaret Walls,* Working Group on Waste Prevention and Recycling: EPR Policies and Product Design: Economic Theory and Selected Case Studies, OECD, 2006
https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/EPOC/WGWPR(2005)9/FINAL&doclanguage=en
[33] Anu Bradford, *The Brussels Effect: How the European Union Rules the World,* 5, Oxford Scholarship Online, 2019.
[34] Esther Taunton, *Milking it: boutique producers ditch plastic for glass bottles*,2018,
https://www.stuff.co.nz/business/farming/106213934/milking-it-boutique-producers-ditch-plastic
[35] Water Footprint Calculator, *Recycle Plastic*, 2017, https://www.watercalculator.org/posts/recycle-plastic/

- Reuse containers will need to be transported from a container deposit to a washing centre, and back to producers, which will add carbon miles. However, these pale in comparison to the CO2 associated with the proposed CRS where most containers will be freighted from a container deposit to a recycling centre and then freighted to an offshore pollution haven. Additionally, using low- or no-emissions vehicles in the transport structure reduces the overall carbon footprint of the operation.

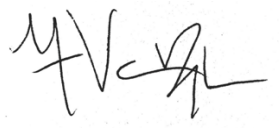
6. Conclusion

A reuse scheme is likely to be a better economic option for New Zealand beverage producers and New Zealand taxpayers than the proposed CRS. In addition, a reuse scheme better aligns with core environmental objectives when compared to the container return scheme, including:

- a circular economy;
- a net-zero carbon economy as set out in the Climate Change Response (Zero Carbon) Amendment Act 2019; and
- reducing plastic in accordance with the Government Response to the Rethinking Plastics Report and international agreements.

There are some downsides to a reuse scheme including standardizing bottle sizes, extra infrastructure associated with sorting and washing bottles and cleaning containers to meet stringent health and safety standards. However, these pale in comparison to the economic and environmental benefits that a container reuse scheme will bring to Aotearoa. Further, through implementing a reuse scheme, New Zealand will be positioned as a world leader in combatting the global waste crisis.

For these reasons we submit that the MfE should fully investigate and pilot a centralised reuse scheme that is implemented alongside the CRS.



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Chia Sisters

Signed by:

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Brent Godfrey
Forty Thieves

Angus Brown
Arepa Beverage Co

Michael Hastie
Bay Road Peanut Butter

Neil Pollett
Green Bottle