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# Productivity Commission Circular Economy Enquiry

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Submission from Western Australia Return Recycle Renew Limited

October 2024

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## Introduction

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Western Australia Return Recycle Renew Limited (WARRRL) is a not-for-profit organisation appointed in 2019 by the Western Australian Government as the Coordinator for the Container Deposit Scheme (CDS), which has operated as Containers for Change since October 2020. The Scheme has grown to support a strong, diverse network of over 270 refund points operated by over 60 independent organisations, providing employment opportunities through social enterprise, not for profit and for-profit organisations.

Since commencement, over 3.6 billion eligible beverage containers have been saved from landfill, \$340 million has been refunded to Western Australians by way of their deposit on eligible drink containers, including \$13.3 million donated to charities and community groups and causes. Eighty-five per cent of Western Australians have participated in Containers for Change and it is the most common recycling disposal method at home with 75% of Western Australians stating that they will participate in the Scheme in the future. Our success is echoed by the increase in the Australian container recovery rate from 33% in 2021 to 65.4% in September 2024.

The statutory provisions to establish the container deposit scheme are contained in the *Waste Avoidance and Resource Recovery Act 2007 WA* (WARR Act). Further provisions, including the requirement to achieve a recovery rate of 85 per cent for eligible containers, are set out in the *Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulations 2019 WA*.

WARRRL is working collaboratively with the Western Australian Government, the Waste Authority and the Department of Water and Environmental Regulation (DWER) to develop the settings to achieve the 85% target and contribute to the development of a truly circular economy. WARRRL has focused its efforts on understanding and influencing the motivation of people to return containers through behaviour science principles and addressing ecosystem challenges to container recovery, such as out of home capture and recovery. This focus will continue, but with a stronger focus, effort, and investment on commercial and industrial sector locations and public spaces.

WARRRL's submission to the Productivity Commission Circular Economy Enquiry is based on its perspective, knowledge and experience, developed over the last four years as the Western Australian container deposit scheme has evolved and matured. Despite the success of the Western Australian Scheme, and along with other recent CDS developments across Australia, the potential to deliver an even stronger beverage container circular economy outcome is significant. Today in Western Australia, even though, as stated above, over 3.6 billion containers have been saved from landfill and recycled, 560 million beverage

containers per annum remain unrecovered, and on national basis, that number exceeds several billion containers all of which could play a strong role in the circular economy.

WARRRL’s experience demonstrates that whilst moderate success is achievable, major success is dependent on Governments, the community, business and householders all having a stake in the circular economy, and when practical, incentives to participate are embedded in waste and recycling management systems.

WARRRL proposes the following recommendations, the justification for which are further elaborated in the body of the submission.

## Summary of Recommendations

#	RECOMMENDATION
1	That more granular data from general waste collections be made available to better identify opportunities for additional material recovery.
2	That a national economic and social impact review of CDS across Australia be undertaken to better understand and promote the wide-ranging benefits of CDS for the economy and community.
3	That consideration be given, and funding provided to develop national behaviour change programs and consumer education campaigns.
4	That Stronger regulatory support for initiatives or requirements to separate recyclable materials at source be provided, including requirements to provide the necessary infrastructure to support separation of containers at the point of disposal and the proactive use of local government planning policies.
5	That recognition of and support for the challenges of resource recovery based on location be given including: <ul style="list-style-type: none"> <li>• Impact of transport costs and access to processing infrastructure in low population density jurisdictions such as Western Australia.</li> <li>• Difficulty of recovery in regional and remote locations including remote Aboriginal communities.</li> </ul>
6	That national standards on packaging inputs be strengthened to eliminate common contaminant materials that erode material recyclability; and require national mandatory requirements for packaging circularity to drive demand for recyclable material.

## # RECOMMENDATION

<b>7</b>	That consideration be given to the value and effectiveness of prohibiting the disposal of recyclable material to landfill by material recovery facilities.
<b>8</b>	That strong cost disincentives for disposing recyclable materials in landfill be established including appropriately set landfill levies
<b>9</b>	That efforts to harmonise state and territory scheme operational requirements be accelerated to encourage and maintain strong support from the beverage manufacturing and distribution sectors across all container deposit schemes.

## Scope Area 1 – Australia’s material productivity

The Department of Climate Change, Energy, Environment and Water (DCCEEW) in 2020–2011<sup>1</sup> noted the following packaging sector performance outcomes:

- 6.74 million tonnes of packaging was placed on market (POM).
- 86% of packaging POM had good recyclability.
- 35% of packaging had good recyclability but was not collected or reprocessed.
- 44 % of packaging POM was disposed to landfill.

DCCEEW claims that the lost value of this material is estimated at \$520 million, at a weighted average value of \$176/tonne.

This summary of packaging sector performance is largely consistent with the profile attributable to its eligible beverage container subset. However, WARRRL wishes to stress that 100% of eligible containers under its Scheme are recyclable, therefore container deposit schemes represent a higher order potential contribution to circular economy goals than other sectors.

### Container Recovery Rate (CRR)

WARRRL measures core performance outcomes by reference to the container recovery rate (CRR). This is simply a percentage calculated using the number of containers recovered by

<sup>1</sup> <https://www.dcceew.gov.au/environment/protection/waste/packaging>

CDS refund points plus containers recovered by material recovery facilities (MRFs), divided by the total number of containers first supplied by beverage related companies (and multiplied by 100). All data are verifiable through statutory declaration, reporting, and auditing consistent with State based regulation.

WARRRL believes that the container recovery rate metric is a viable and appropriate long term success measure for CDS. By reporting on this measure, the CDS sector can establish how many containers are not being recovered and therefore not recycled.

Australian and international experience demonstrate that a much higher container recovery rate is achievable. In FY24, WARRRL achieved a container recovery rate of 65.4 per cent. This is largely consistent with other Australian schemes at a similar Scheme age (i.e. after four years of operation).

The South Australian scheme, which has been in operation since 1977, has achieved a rate of 76%.<sup>2</sup> Numerous international jurisdictions have achieved a rate of 90 per cent or higher with their schemes including Norway, Germany and Lithuania.<sup>3</sup>

Whilst the container recovery rate measure identifies the potential for the capture of further material, WARRRL believes that ensuring that the recovered material benefits from circularity is equally important. Recovering beverage container material and making it available as feedstock for processing so that it can be utilised again for future beverage container production is clearly an important goal, and this should be measured and reported.

Both these initiatives of measurement and reporting would create greater visibility and awareness of material circularity, which WARRRL knows is a key consumer motivator in enabling the individual action required to support recycling. That is, if a consumer believes that the container will be recycled, they are more likely to take the necessary action to ensure that it is. Glass recovered through WA's CDS is currently bottle-to-bottle recycled and this category of material is well understood by consumers as a highly recyclable material. Extending circularity beyond glass to other material categories will serve to further fortify favourable consumer opinion.

## **Granularity in Commercial and industrial (C&I) waste material data**

WARRRL believes that the reporting of commercial and industrial (C&I) waste and recycling outcomes is inadequate. Current State based reporting in this area is an aggregate only, providing little actionable information to recycling industry participants like WARRRL. More

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<sup>2</sup> [https://www.epa.sa.gov.au/environmental\\_info/waste\\_recycling/container\\_deposit](https://www.epa.sa.gov.au/environmental_info/waste_recycling/container_deposit)

<sup>3</sup> ReLoop Deposit Return System Fact Sheet <https://www.reloopplatform.org/wp-content/uploads/2018/05/Fact-Sheet-Performance-17MAY2017.pdf>

granular information is required so that sector / channel interventions can be tailored to support higher levels of container recovery. In the absence of reliable data, WARRRL is left to plan and prioritise interventions based on its own market knowledge. This is potentially inefficient, slowing the rate of CRR improvement.

For example, a granular segmentation into sectors such as hotel, restaurant and café/catering (HORECA), manufacturing, health, retail, government and education would allow for improved resource allocation, providing a more targeted approach for WARRRL to pursue opportunities for additional container recovery. WARRRL understands that while waste companies have this data it is not currently available to third parties.

Additional granular detail will enable WARRRL to make improved strategic decisions in recovering eligible containers from current landfills or avoid them being destroyed and lost to Waste to Energy plants, in certain sectors within the C&I segment.

#### **Recommendation 1:**

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**That more granular data from general waste collections be made available to better identify opportunities for additional material recovery.**

#### **National economic impact statement**

Across Australia CDS is arguably the leading scale example of the circular economy in action. The benefits of CDS are extensive and range from improved resource recovery from a consumer category built on recyclable material, through to employment generation (especially for disadvantaged people) and building sustainable social enterprises. Whilst these benefits may fall unevenly across participating jurisdictions, they are all present to some extent. In that context, WARRRL believes attaining a more comprehensive understanding of the net economic and social impact of CDS across Australia would assist jurisdictions to improve the container recovery rate with all its associated benefits and thereby increase circularity. Now that all states and territories have or are close to having a state based container deposit scheme, this proposal is very timely.

#### **Recommendation 2:**

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**That a national economic and social impact review of CDS across Australia be undertaken to better understand and promote the wide-ranging benefits of CDS for the economy and community.**

## Scope Area 2 – Priority circular economy opportunities

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WARRRL believes that a focus on eligible beverage container recovery is entirely appropriate to improve materials productivity and efficiency, given the CDS industry's visibility, maturity and potential to achieve higher container recovery rates.

Container deposit schemes represent a highly visible, community endorsed and supported, and increasingly understood manifestation of delivering circular economy. The overall positive sentiment toward CDS should be leveraged by governments to support measures that can drive much higher levels of container recovery than are being achieved.

Current performance outcomes demonstrate a significant opportunity to further improve the CRR and thereby material productivity and efficiency. As mentioned, with current recovery rates, its estimated that several billion containers are disposed to landfill nationally each year. All that material is recyclable and represents loss of potential product, necessitating higher use of virgin materials as well as wasted capacity at existing processing infrastructure and putting greater pressure on stretched landfill facilities, or otherwise lost to circularity through Waste to Energy plant operations. The focus of the Commonwealth State Recycling Modernisation Fund is to create capacity and capability that maximises the ability to productively utilise recyclable material. These investments are undermined by continued inappropriate use of landfill or Waste to Energy as a disposal mechanism.

International experience has demonstrated that best practice container recovery rates exceed 90%. Examples include Norway achieving a 92% return rate,<sup>4</sup> Germany achieving a 98% return rate and Lithuania achieving a 92% return rate. Recent research demonstrated that the median European CDS performance is approximately 82%,<sup>5</sup> demonstrating that even without best practice initiatives, significant additional improvement is possible.

A circular outcome for recovered eligible containers is, in part, currently being achieved, however this can be improved with a higher capture rate of containers. A higher CRR enables feedstock for recyclers who have the necessary capability. Achieving a consistently higher CRR serves to motivate individual behaviour, through it being 'socially normed' and provides confidence to industry that higher levels of feedstock will continue to be available to it.

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<sup>4</sup> <https://www.tomra.com/en/reverse-vending/media-center/feature-articles/norway-deposit-return-scheme#:~:text=In%202021%2C%20Norway%20achieved%20a,the%20increase%20in%20deposit%20value.>

<sup>5</sup> ReLoop Deposit Return System Fact Sheet <https://www.reloopplatform.org/wp-content/uploads/2018/05/Fact-Sheet-Performance-17MAY2017.pdf>



## Reducing carbon emissions

Meaningful emissions reduction outcomes can be achieved through a higher level of recycled content in the production of consumer goods packaging including containers.

DCCEEW notes that in Australia in 2020–21, 44% of packaging placed on market was disposed to landfill. If all landfilled packaging had been recycled in 2020–21, it would represent a reduction in national greenhouse gas emissions of about 2.2 million tonnes, equal to removing 740,000 cars from the road per year.<sup>6</sup>

Recent research also suggests that replacing virgin PET with recycled content PET (rPET) may reduce greenhouse gas emissions by 50.8 per cent.<sup>7</sup>

A higher level of recycled content would be supported by avoiding container loss to landfill.

From a glass recycling viewpoint there are significant benefits in using recycled glass instead of virgin material (sand) when producing new glass bottles. Research conducted for WARRRL by Think Step<sup>8</sup> found that based on a European Container Glass Federation's study that for every tonne of recycled glass 0.67 tonnes of CO<sub>2</sub>e is saved which is a reduction in CO<sub>2</sub>e emissions of 58%.

The reason for the reduction in CO<sub>2</sub>e are primarily that less energy is needed to melt the recycled glass than virgin sand. Recycled glass replaces some materials which break down in the furnace (calcium carbonate) and therefore 1.2 tonnes of virgin raw material do not need to be quarried, processed and transported to the glass furnace.

The study uses values from the GABI Life Cycle inventory Database which align with these results. A significant success factor in recycling outcomes is individual behaviour and how motivated community members are to make the effort to recycle.

## Behaviour change principles

WARRRL has adopted a strong behaviour science approach to its strategy and the development of key business initiatives. WARRRL believes that a national approach would significantly enhance the national effort and commitment to achieving a circular economy. This could include a national consumer 'behaviour change' program that supports the correct use of bin infrastructure, in and out of home, including business and other non-residential settings, to maximise the capture of recyclable material including FOGO. While state systems often run their own behaviour change programs, no national behaviour

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<sup>6</sup> <https://www.dcceew.gov.au/environment/protection/waste/packaging>

<sup>7</sup> <https://resource-recycling.com/plastics/2018/08/22/quantifying-environmental-benefits-of-recycled-plastic/>

<sup>8</sup> Comparative Carbon Assessment, Glass Recycling Options, July 2022, Hari Thekepat and Sam Warmerdam, Think Step ANZ.

change program has supported container deposit schemes in operation around the country. Consideration could be given to a national campaign to promote positive behaviour change in support of better material separation at source to increase the capture and reuse of recyclable material.

A 2023 CDS behaviour change national research report released in March 2023, by the Heads of Environmental Protection Agencies, provides useful segmentation of participant behaviour and strategies for helping to drive continued positive behaviour change across the nation. WARRRL urges that these findings be acted upon.<sup>9</sup>

Recognising the important role that local governments can play in improving recycling efforts, this sector could use their best endeavours to meet minimum performance standards regarding community education on material sorting and associated behaviours. In supporting a national behaviour change campaign, consideration should be given to how local governments can support education efforts, especially with regards to material sorting.

### **Recommendation 3**

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**That consideration be given, and funding provided to develop national behaviour change programs and consumer education campaigns.**

## **Scope Area 3 – Barriers to enhanced material productivity**

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WARRRL believes that local planning policies (adopted by Local Government Authorities) should include a requirement to include a container separation solution as part of any development application relating to new commercial or mixed-use developments. In the absence of a localised CDS point of return, the ability to separate containers at point of disposal is critical to assist with other forms of collection for recycling.

Requirements for container separation at points of disposal can be included in state and local Government planning rules to help normalise the act of separation, especially in multi-dwelling and commercial and industrial premises.

### **Recommendation 4**

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**That stronger regulatory support for initiatives or requirements to separate recyclable materials at source be provided, including requirements to provide the necessary**

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<sup>9</sup> [https://www.epa.sa.gov.au/environmental\\_info/waste\\_recycling/container\\_deposit/hepa-cds-behaviour-change-report](https://www.epa.sa.gov.au/environmental_info/waste_recycling/container_deposit/hepa-cds-behaviour-change-report)

**infrastructure to support separation of containers at the point of disposal and the proactive use of local government planning policies.**

When considering policies to support circular economy activities and outcomes in Australia, the impact of long distances and low population densities on CDS operations need to be taken into account. Access to infrastructure can often not be equitable, nor its associated servicing costs. Recognition of these matters and support to overcome them should be considered to support resource recovery in regional and remote communities. WARRRL believes policies that support landfill avoidance of recyclable containers is needed to enable remote Aboriginal communities to participate in the circular economy.

In addition, recognition should be given to the fact that significant processing infrastructure is often located in jurisdictions on the Eastern seaboard. This means that recyclable material from more distant States, particularly Western Australia, are subject to higher transport costs and therefore less competitive with eastern state material from a recycler perspective.

### **Recommendation 5**

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**That recognition of and support for the particular challenges of resource recovery based on location be given including:**

- **Impact of transport costs and access to processing infrastructure in low population density jurisdictions such as Western Australia.**
- **Difficulty of recovery in regional and remote locations including remote Aboriginal communities.**

Another barrier to enhanced material productivity is the contamination of material due to several factors. One such factor is the use of PVC in beverage containers. Containers made from PVC are often mistaken by consumers for PET. In WARRRL's experience, small or repeated concentrations of PVC will affect the price recyclers are willing to pay for baled PET and in some instances, recyclers may avoid purchasing bales contaminated with PVC at all. This contamination creates wastage, undermines circular economy outcomes and risks public goodwill.

A strong response would be to strengthen national standards on packaging inputs to eliminate common contaminant materials that erode material recyclability and can contaminate the valuable PET material recycling stream.

### **Recommendation 6**

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- **That national standards on packaging inputs be strengthened to eliminate common contaminant materials that erode material recyclability; and require**

**national mandatory requirements for packaging circularity to drive demand for recyclable material.**

WARRRL would like to draw attention to several other pertinent points that the Productivity Commission could consider in creating a more effective environment in which circular economy initiatives can flourish.

## **Contemporary approach to landfill**

There is clearly far too much recyclable material being dumped in landfill. It is timely to consider prohibiting the disposal of any recyclable material to landfill by material recovery facilities. Similar to efforts in jurisdictions to prohibit certain types of waste from going to landfill to support circular economy efforts (e.g. prohibition on e-waste going to landfill in Western Australia), consideration could be given to a ban on recyclable materials going to landfill, once they have arrived at a Materials Recovery Facility (MRF). At present the two largest MRFs in Western Australia are understood to operate on an 85-88% recovery rate, with the balance currently being sent to landfill. Whilst MRFs have improved their sorting capabilities to reduce the unrecoverable material being sent to landfill, further improvements could be achieved that support circular economy outcomes.

WARRRL believes that landfill levies (at current low rates) provide an unintended financial incentive for waste ecosystem participants to avoid the use of comingle or recycling systems. Whilst WARRRL is not suggesting that more appropriately set landfill levies should be considered as a subsidy for the circular economy, it does suggest that they can be a lever that provides consequences for the dumping of recyclable material in landfill.

### **Recommendation 7**

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**That consideration be given to the value and effectiveness of prohibiting the disposal of from disposing recyclable material to landfill by material recovery facilities.**

### **Recommendation 8**

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**That strong cost disincentives for disposing recyclable materials in landfill be established including landfill levies.**

## **National harmonisation of CDS in States and Territories**

Now that all states and territories have or will soon have container deposit schemes, the importance of harmonising CDS operational requirements nationally becomes more critical. This will encourage and maintain strong support from the beverage manufacturing and

distribution sector by removing individual jurisdictional differences thereby creating greater efficiency and reduce possible frustration felt by the beverage industry as they have to negotiate different jurisdictional administrative processes currently.

It is proposed that essential harmonisation occur in the following:

- Registration of entities and containers.
- Collation of basic contract details to prepare each jurisdiction, state-based agreement (entity name, ABN, address, directors, ASIC documents etc).
- Reporting of sales volumes by state.
- Invoicing, collection and distribution of funds to relevant states.
- Auditing of beverage company sales declarations.

## Recommendation 9

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**That efforts to harmonise state and territory scheme operational requirements be accelerated to encourage and maintain strong support from the beverage manufacturing and distribution sectors.**

## Concluding remarks

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WARRRL has been operating the container deposit scheme for four years, during which time, its role in genuine recycling has been solidly cemented. More than that though, WARRRL's contribution through the container deposit scheme to the circular economy is beyond doubt. WARRRL's experience fully supports the views of The Minister for the Environment and Water's Circular Economy Advisory Group, which has identified that there is a panoply of barriers to a strong circular economy: commercial, regulatory, information amongst others. Add to this the need to better understand and address the behavioural barriers that has been highlighted in this submission. Collaboration and cooperation at all levels of government, supported by genuine investment from Australian business present the greatest opportunity to achieve a circular economy.

## ATTACHMENT 1 – PRODUCTIVITY COMMISSION TERMS OF REFERENCE

### Productivity Commission Circular Economy Enquiry

#### Terms of reference

I, the Hon Jim Chalmers MP, Treasurer, pursuant to Parts 2 and 3 of the *Productivity Commission Act 1998*, hereby request that the Productivity Commission undertake an inquiry into Australia's opportunities in the circular economy to improve materials productivity and efficiency in ways that benefit the economy and the environment.

#### Background

A circular economy is an economic strategy that maintains the value of materials for as long as possible and ensures materials are used efficiently across all phases of their life cycle. In October 2022, Australia's Environment Ministers committed to accelerate the transition to a circular economy by 2030.

International studies suggest that a more circular economy supports higher economic growth and productivity, including by increasing materials productivity (how much output is produced per unit of raw input). Australia currently has the fourth lowest rate of materials productivity in the OECD. We generate US\$1.20 of economic output for every kg of materials consumed, which is under half the OECD benchmark of US\$2.50

The Minister for the Environment and Water's Circular Economy Advisory Group has also identified commercial, regulatory, information and other barriers to achieving a more circular economy, and opportunities for Australia to improve economic and environmental outcomes through greater materials productivity and efficiency.

However, there is currently limited analysis of these matters, including the relative importance of these opportunities and how they should be measured and realised.

#### Scope

In this inquiry, the Productivity Commission is to investigate and report on:

- The potential scope to lift Australia's materials productivity and efficiency, and the best metrics to measure this opportunity and improvements made.
- Priority circular economy opportunities for Australia, including identification of the sectors, products or supply chain segments:
  - Where Australia has the greatest potential to improve materials productivity/efficiency in ways that can strengthen economic outcomes, such as productivity, economic growth, economic diversity and capability.

- Where other countries have made the greatest progress towards circularity, and the risks and opportunities associated with these developments in international markets for Australia
- Where cost-efficient emissions reduction could be achieved by improving materials productivity and reducing waste.
- Barriers to enhanced materials productivity and prospective approaches to addressing them, including but not limited to:
  - Place based circular economy activities (e.g. industrial precincts and others enabled by urban planning and development)
  - Regulatory frameworks, and other mechanisms that influence businesses' and consumers' decisions on materials purchasing, use and replacement or the competitiveness of circular economy initiatives
  - Policy actions that are achievable over the near and medium term
  - Policy actions that could be progressed by Commonwealth, state and territory, and local governments, including improvements to existing national policy frameworks.

The Commission's findings will inform policymaking regarding strengthening Australian circular economy. Accordingly, recommendations made by the Commission should, where relevant and appropriate, include an assessment of implementation feasibility and risk.

### **Process**

The Commission should engage with relevant stakeholders and experts, including the state and territory governments, to identify opportunities and constraints in this area.

The Commission should provide a final report to government within 12 months of the receipt of this Terms of Reference.

**The Hon Jim Chalmers MP**  
**Treasurer**