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Friday 11 April, 2025

Re: Response to the Interim Report: Australia's Circular Economy

Dear Commissioner J.Chong and Commissioner A.Roberts,

Thank you for the opportunity to respond to the interim report on the circular economy. Your analysis highlights key areas for advancing the circular economy in Australia, especially regarding the management of key product streams, supported by effective regulated product stewardship frameworks.
As one of Australia's leading on shore recyclers, we have focused our responses on end of life of these product streams based on our experience on managing the collection and recycling process, and the requirement for further regulated frameworks that are required to build a solid circular economy in Australia.

We commend the NSW Government and NSW EPA on their recently introduced and passed into law, the Product Lifecycle Responsibility Act 2025 which allows for product stewardship requirements and targets to be established for the entire lifecycle of a regulated product. This paves the way for a solid approach to product stewardship in this country that can be implemented into all States to deliver a harmonised approach across the country. We support this approach and encourage all States to follow the suite.

At Ecocycle, we support the reforms in the Commissioners report that advocate for the introduction of broader product stewardship regulation to deal with the end of life collection and recycling of product streams including household, consumer and emerging electronics, batteries, electric vehicle batteries and for small scale PV systems. The reform should also consider banning the export of unprocessed steel pressings and regulating the collecting and processing of dental amalgam. This will not only achieve a greater recovery of resources, but at the same time reduce the disposal of valuable resources to landfill. We feel that this would bring significant positive outcomes to the Australian economy along with improved environmental outcomes.

Strengthening and expanding the National Television and Computer Recycling Scheme (NTCRS) is essential for enhancing circularity. This expansion should include a wider range of products, particularly devices with embedded batteries. We recommend that the government focus on resolving the existing challenges within the NTCRS before considering the integration of reuse and repair targets for the scheme. Any regulated framework should include improving transparency and accountability, and implementing robust auditing practices, a framework that maximises resource recovery and minimises waste, which are both essential components of a circular economy.

Finally, we recognise that public awareness and education play a vital role in fostering a circular economy. A nationwide consumer education campaign can promote active participation by consumers and instil a culture of responsible consumption and waste management. We believe that this would also raise awareness on how to safely dispose of products, including products with embedded batteries, and assist in reducing the increase of fires in the collection network that have been on the increase over the last few years.

These recommendations can collectively strengthen the circular economy in Australia and ensure sustainable management of resources. I appreciate the Productivity Commission's commitment to addressing these pressing issues, and we look forward to collaborating on initiatives that support a circular future in Australia.

Sincerely,

Doug Rowe
CEO, Ecocycle

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Responses:

Chapter 8: Vehicles

Reform direction 8.2 Establish the foundations of a robust end-of-life electric vehicle battery industry

The PC is considering the role for the Australian Government in improving end-of-life electric vehicle (EV) battery management and supporting the establishment of a circular industry for EV batteries. This could involve implementing a co-regulated product stewardship scheme to oversee the end-of-life management of EV batteries, featuring:

- improved traceability of EV batteries, such as through a digital passport
- regulations on second-use battery quality and performance for consumer use
- standards for the transport, storage and end-of-life processing of EV batteries.

The current landscape for reusing, repurposing, and recycling electric vehicle (EV) batteries faces notable barriers that need attention. The market demand for second-life battery products in Australia is unknown at this stage as the market is still growing for EV technology. A potential challenge to increase reuse is the lack of regulations to ensure safety and warranty concerns are met when batteries are reused, whether in EV applications or energy storage. Additionally, the potential shortage of qualified technicians would hinder the development of a robust market. As battery technologies evolve rapidly, establishing comprehensive guidelines is crucial to ensure reused batteries comply with current performance standards.

Furthermore to this the price of producing new batteries continues to fall around the world and the risk of reusing batteries sustainably remains high if not managed appropriately. Add to this that recycled battery materials are now finding their way back into the manufacturing of new batteries, means many OEMs are delivering a true circular approach to managing end of life batteries.

Promoting local recycling initiatives is essential for enhancing battery management capabilities. Encouraging partnerships between brand owners and local recyclers, rather than relying on offshore processing, can support local economies and improve onshore capacities. A transparent reporting system for brand owners is essential to track the management of end-of-life products and to prevent improper offshore transport, fostering sustainable practices in Australia's EV battery market.

Significant investment is required to support on shore recycling of EV batteries. Ecocycle is committed to developing the local processing of material, avoiding the need to ship product offshore for processing and the risks associated with that. This is evidenced by Ecocycle's construction of a $50 million lithium-ion battery recycling facility in Brisbane, set to enhance local battery processing by 2026. This will be a world class facility using the latest technology and the largest in this region. Government support for such initiatives is crucial for fostering economic growth and creating jobs within the recycling sector.

Moreover, Ecocycle's commitment to developing processing capabilities for black mass highlights the significant economic and environmental benefits of local recovery practices. The anticipated higher recovery rates and production of reusable materials can fortify Australia's emerging battery manufacturing sector, leading to job creation and innovation. Prioritising high-grade black mass recovery, rather than excessive refinement, can yield substantial economic benefits while supporting a sustainable battery management ecosystem.

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State, territory, and local governments can play a vital role in facilitating a cohesive product stewardship scheme by adopting supportive legislation and investing in local recycling infrastructure. The NSW EPA Product Lifecycle Responsibility Act 2025 serves as an encouraging precedent for consistent regulatory frameworks, which can improve participation rates in battery recycling programs.

To address environmental and safety concerns associated with battery handling, mandatory product stewardship schemes are necessary to hold manufacturers accountable for responsible disposal practices. Investing in specialised recycling facilities and rolling out public education campaigns about safe battery management will enhance safety and promote environmental sustainability.

Ultimately, addressing the challenges related to EV battery reuse and recycling necessitates collaborative efforts among stakeholders, effective regulatory frameworks, and strategic investments. By prioritising local solutions and fostering innovation, we can advance towards a responsible circular economy in the growing battery industry.

Chapter 9: Household, consumer and emerging electronics

Recommendation 9.2 Include reuse and repair targets in the NTCRS and increase the use of tracking devices

The Australian Government should amend the NTCRS to include reuse and repair within annual targets, as previously recommended in the PC's Right to Repair inquiry (2021). The NTCRS should also increase its use of e-waste tracking devices to better monitor co-regulatory bodies and their downstream recyclers.

As a participant in the National Television and Computer Recycling Scheme (NTCRS) and a specialised e-waste recycler, Ecocycle's response here is focused on the collection, transportation, and recycling of end-of-life products. We believe the immediate priority should be to address the existing challenges within the NTCRS framework before considering the introduction of repair and reuse targets for the scheme.

There are fundamental issues with the NTCRS that require attention. This includes expanding the scope of the scheme to include all products with a plug or battery as a priority. This would address the growing volume of electronic waste currently ending up in landfill and hence a loss of resources that could be recovered through recycling. In most cases due to the lack of a take back program.

Additionally, addressing the commercial model of the scheme remains crucial to ensuring its effectiveness and sustainability. The introduction of the scheme in 2014 was intended to implement a product stewardship scheme that generated a competitive model, however what it has achieved is a race to the bottom, where OEMs are driven by paying the least amount to meet their liability, and ultimately impacting sustainable outcomes.

There is also a need for greater transparency and accountability within the scheme, which can be achieved through the implementation of robust auditing frameworks. Such frameworks would ensure that all collected products are managed in compliance with regulatory standards, moving away from self-auditing practices that currently govern the process.

Ecocycle advocates for a focus on resolving these core challenges of the NTCRS before exploring the potential role of repair and reuse within the scheme. We also recognise that many consumers currently opt to utilise schemes because they value the assurance that their products, along with any data left on devices, will be destroyed through the recycling process. Therefore, it is essential that consumers can still recycle products without requiring them to opt in or out of repairs or reuse initiatives. This would require a consumer campaign to ensure a clear understanding of what happens to product and how it could be reused by the scheme.

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In the context of the recent Right to Repair review conducted by the Productivity Commission, there were several recommendations put forward, which as we understand have not been acted on by the Government. The Australian Government was encouraged to mandate that suppliers of agricultural machinery provide access to critical repair supplies, investigate specific product markets such as mobile phones and medical devices, and amend copyright laws to allow greater sharing of repair information and resources. These would all sit outside the scope of current framework for stewardship schemes but would have a positive impact on the broader principles of repair and reuse. Along with this, there is also a need for improved consumer information regarding a product's repairability and durability, which could be achieved by a labelling initiative.

Reform direction 9.3 Product stewardship for small electronics, including embedded lithium-ion batteries

The PC supports the Australian Government's intention to establish a co-regulatory product stewardship scheme for small electronics and is seeking further information on how the scheme could be designed and implemented to support materials productivity and economic outcomes. Given the immediate risks of battery fires and the inefficiency and complexity of creating multiple state and territory-based stewardship systems, the Australian Government should prioritise establishing co-regulatory stewardship arrangements for electronic products with embedded lithium-ion batteries. Harmonising regulations for lithium-ion batteries will support the success of this scheme.

Ecocycle supports the establishment of a mandated product stewardship scheme for small electronics that integrates embedded lithium-ion batteries. Given the risks associated with battery fires and the complexities of multiple state-based systems, a unified approach is essential. Harmonising regulations will enhance the effectiveness and adoption of the scheme across Australia.

We advocate for a thorough review and expansion of the National Television and Computer Recycling Scheme (NTCRS) to include all plug-in electronics and battery-operated devices. Currently, Australia recovers only about one-third of the e-waste generated, leading to significant financial losses and environmental harm. This reform would improve resource recovery, generate revenue for local economies, and create jobs in the recycling sector.

We advocate for the transition of the National Battery Stewardship program from a voluntary to a mandatory framework to eliminate the issue of non-compliance among brands and importers. Establishing mandates under the Recycling and Waste Reduction Act 2020 is necessary to maintain program sustainability and achieve recycling targets. Furthermore, addressing fire safety is paramount, as the rising incidents linked to improper battery disposal underscore the urgent need for proper waste handling.

The NSW EPA's Product Lifecycle Responsibility Bill 2025 sets an important precedent for structured battery stewardship and should serve as a model for harmonising stewardship programs across all jurisdictions. A unified scheme will alleviate confusion for consumers and enhance overall compliance.

A mandatory scheme covering all products with plugs and batteries weighing up to 5 kilograms would simplify recycling efforts and ensure all recyclable materials are efficiently processed. Whilst we acknowledge that the implementation of enhanced regulatory changes to the existing Waste Reduction and Recycling Act could take time to implement, consideration should be given to require brand owners to publicly report on take back initiatives, including key performance indicators similar to regulated frameworks.

A national ban on e-waste, including lithium-ion batteries, is also essential to protect communities from fire risks and improve recycling outcomes. Comprehensive regulations must be implemented to prevent valuable materials from entering landfills and to reduce contamination rates in e-waste.

Lastly, enhancing consumer education is vital. A nationwide campaign will clarify recycling options available for small electronics and foster responsible waste management practices. It is essential to address both public awareness and infrastructure challenges, particularly in remote areas, to improve recovery rates.

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Information request 9.3 Product stewardship for small-scale PV systems

Ecocycle strongly supports the inclusion of large-format and energy storage batteries in the product stewardship scheme for small-scale photovoltaic (PV) systems. These batteries are critical components for the operation of PV systems, and when systems are upgraded or decommissioned, the associated batteries are often replaced or removed. If not properly handled, these batteries can pose significant risks, including hazards from improper disposal and illegal dumping. Including them in the stewardship scheme will ensure responsible management throughout their lifecycle, thereby enhancing safety and sustainability.

Regarding the compensation for PV systems returned in good condition, while rebates can incentivise participation, it is crucial to clarify who will fund these rebates. In a well-structured stewardship scheme, manufacturers and distributors would be liable for the lifecycle of their products, including the associated costs related to reuse and recycling efforts. This requires establishing clear protocols for assessing the safety of returned systems and ensuring they are properly tested and evaluated.

Additionally, any take-back program must factor in the availability of qualified technicians to safely handle and assess returned units. A strategic approach to developing this program will help maintain safety and quality standards, thereby enhancing the effectiveness of reuse initiatives.

Local governments can play a critical role in establishing effective collection points for PV waste, particularly in regional and remote areas. However, the current infrastructure under the National Television and Computer Recycling Scheme (NTCRS) is not equipped to manage large-scale PV equipment. Consumers are unlikely to transport bulky items to collection sites on their own. Therefore, collaboration with industry installers is essential to create an efficient collection and drop-off system, which would improve accessibility for consumers and promote higher participation rates in recycling initiatives.

To further promote circularity in the lifecycle of solar PV systems, the stewardship scheme should actively encourage sustainable design practices. Collaborating with manufacturers to set guidelines that prioritise durability, disassembly, and recyclability is essential. Many PV panels currently in circulation are inadequately designed or made from substandard materials, negatively affecting recovery rates at the end of their lifecycle. By advocating for improved design standards and adopting strong criteria for assessing the lifecycle impacts of PV products, we can enhance recovery rates and bolster a more circular economy. These design improvements will mitigate future environmental risks while fostering consumer trust in recycling efforts.

In summary, a comprehensive well funded product stewardship scheme for solar PV systems that includes large-format batteries, along with efficient take-back programs, accessible collection points, and sustainable design practices will facilitate enhanced safety, improved recycling outcomes, and a stronger circular economy in Australia.

Additional Comments:

Unprocessed Steel Pressings

Unprocessed steel, including white goods and vehicles, is potentially being baled and exported to developing markets in shipping containers, where labour and waste disposal costs are significantly lower than in Australia. This practice is resulting in tonnes of baled scrap (unprocessed steel) leaving the country.

This material can be processed locally and sustainably through shredding, with the recovered materials supporting Australia's transition to green arc furnaces that are replacing older blast furnaces that rely on coal and iron ore. The export of unprocessed steel places additional pressure on local markets in Australia, which have invested millions in shredding technology.

Clean steel is essential for fostering the growth of the local steel industry, helping to reduce our carbon footprint, and promoting the recycling and manufacturing of green steel in the market.

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Dental Amalgam

There is significant concern regarding the disposal of mercury-bearing dental amalgam waste, which is currently not regulated and is often improperly disposed of in sewers or landfills. While the Therapeutic Goods Administration (TGA) permits the use of mercury in medical applications, the phase-down of mercury-bearing dental amalgams by 2025 does not eliminate the ongoing creation of this waste for years to come. Although the UN has addressed the phase-down of dental amalgam, effective regulatory controls for its disposal are lacking.

A minority of dental practices in Australia are equipped with amalgam separators, those that do not have them are frequently emptied into sewers or general waste, rather than being managed appropriately. The current practice poses significant environmental risks, compounded by the absence of harmonized national regulations around landfill bans.

Immediate, coordinated action is necessary to address these gaps and ensure effective management of mercury-bearing products in accordance with the Minamata Convention. The Ecocycle Group of Companies is dedicated to supporting initiatives aimed at this goal through specialised materials recycling services and industry leadership. We are open to collaborating with government, industry stakeholders, and the community to promote a sustainable and circular economy in Australia. Dental amalgam should be treated as a priority waste with mandatory requirements for collection and recycling.

We are Australia's most experienced mercury recycler and the only one that is licensed by the EPA in each State to handle the entire process of recycling mercury containing waste.