

01 November 2024

Commissioners Joanne Chong and Alison Roberts  
Productivity Commission  
Via email: [circular.economy@pc.gov.au](mailto:circular.economy@pc.gov.au)

Dear Ms Chong and Ms Roberts,

**RE: Submission to the Productivity Commission on Opportunities in the Circular Economy**

Please find in the following pages a submission to the above inquiry prepared by Planet Ark's Australian Circular Economy Hub (ACE Hub). Planet Ark appreciates the opportunity to contribute this submission.

We would like to congratulate the government for calling this inquiry as well as its many other circular economy related initiatives such as the establishment of the Circular Economy Ministerial Advisory Group (CEMAG), the development of a Circular Economy Framework for Australia, and the acceleration of product stewardship including the creation of EPR schemes for packaging and e-waste using circular economy principles.

As an environmental organisation with a vision of a world where we thrive in balance with nature, we are committed to driving positive environmental actions. Planet Ark advocates for a comprehensive and inclusive net zero circular economy strategy for Australia that prioritises sustainable resource management, carbon and waste reduction, and economic innovation.

Our submission document herein is comprised of three parts:

1. Our reflections on the urgent need
2. Key information and recommendation on what we believe we need to have for a Circular Economy transition
3. Direct responses to your information requests

We refer to various documents throughout this submission. We have referenced key links and can provide a full citation list on demand.

Should you have any questions or clarifications necessary, please feel free to contact our Head of Circular Economy Development, Dr Nicole Garofano  
or our Chief Sustainability Advisor, Paul Klymenko

Thank you again for this opportunity.

With kind regards,

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## 1. Our reflections on the urgent need

### 1.1 The urgent need for a global net zero Circular Economy

A circular economy just makes common sense as it mimics the cyclic nature of the biosphere that provides us our existence. Our planet's 'bioeconomy' is organised according to circularity principles - **nothing is lost, waste does not exist and everything is cycled endlessly**, including the atoms that make up our bodies.

With our current mainly linear economy we have exceeded most of our [planetary boundaries](#). It is vital to understand that all the environmental issues we face (climate change, loss of biodiversity, toxic pollution etc) can be traced back to the type and volume of resources we are extracting from nature. For example, climate change, much biodiversity loss and toxic pollution is as a result of human society choosing to extract and use fossil fuels in huge volumes to underpin our economies.

[Global Footprint Network's 2023](#) Ecological Footprint data indicates that we are consuming the earth resources at a rate equivalent to **1.7 Earths** per year. However, if everyone globally consumed resources at the same rate as the average Australian, it would require approximately **4.5 Earths** to sustain that level of consumption.

The [UNEP International Resource Panel's Global Resources Outlook 2024](#) shows that resource use has more than tripled since 1970 to 106 billion tonnes. This a staggering c13 tonnes per person though with great disparity as high-income nations have material footprints exceeding 20 tonnes per capita annually, while low-income countries average around 3-4 tonnes. Notably the extraction and processing of natural resources account for approximately 60% of global greenhouse gas emissions and over 90% of biodiversity loss. The report emphasises that adopting circular economy principles is vital for mitigating climate change and environmental degradation.

In essence, the unsustainable scale and type of our resource use is the root cause that interlinks our 'wicked' environmental issues.

The way we currently use resources is not only environmentally destructive to our future, but it also undermines economic and societal resilience. By shifting to a circular economy, we can decouple growth from resource consumption, opening up opportunities for innovation, cost savings, new jobs, and new revenue streams. Transitioning towards a net zero circular economy, is not only essential but urgent to re-establish our Earth's safe operating space within Planetary Boundaries.

### 1.2 The importance and urgency for Australia

In addition to this environmental urgency, as highlighted in your comprehensive paper, Australia has a strong need for shifts in policy and practice as we have a relatively inefficient and wasteful economy as illustrated by the following data:

- Australia has the 3rd highest material footprint per capita and 4<sup>th</sup> lowest rate of material productivity in the OECD (OECD)
- We only generate US\$1.20 of economic output for every kg of materials consumed, under half the OECD benchmark of US\$2.50 (CEMAG)
- Has a circularity rate of 4% vs global 7% (CSIRO)

- Annually Australian firms spend c\$1.4 billion sending c\$26.5 billion worth of material to landfill (CEMAG)
- The volume of waste generated per capita is 2.95 tonnes, of which over a tonne ends up in landfill (National Waste Report)
- We are a top emitter in the OECD for Greenhouse Gas emissions per capita, over 3 times the global average (OECD)

As a resource rich exporter of primary resources, we are in a particularly vulnerable economic position as the world increasingly decarbonises and becomes more circular. This is highlighted in the OECD's 2020 report, [The Consequences of a More Resource Efficient and Circular Economy for International Trade Patterns](#).

Their insights strongly suggest that primary commodity exporters such as Australia could face significant economic and environmental challenges if they do not transition towards a more circular economy. Proactive adoption of circular economy practices could help mitigate these risks and foster sustainable progress for us.

## 2. Key information and recommendations

### 2.1 The need for Public and Network Governance

In preparing this section we draw on insights from "[How Network Governance Powers the Circular Economy: Ten Guiding Principles for Building a Circular Economy, Based on Dutch Experiences](#)" by Jacqueline Cramer.

Professor Jacqueline Cramer is a recognised leader in the circular economy, bringing decades of experience from academia, government, and industry. As a former Dutch Minister, she was instrumental in implementing policies that laid the groundwork for the Netherlands' leadership in sustainability and circular practices. Her unique expertise in combining policy insight with practical guidance makes her a highly respected voice in advancing circular economy frameworks globally. Planet Ark's ACE Hub co-sponsored Jacqueline's 6 week visit to Australia in 2022 where we witnessed the practical application of many of her principles.

From this experience we believe this work offers a valuable framework for understanding the collaborative dynamics essential to advancing Australia's circular economy and underscores how public and network governance must intersect effectively.

Cramer emphasises the necessity of combining **public and network governance** to drive systemic change. Public governance creates the regulatory framework and policy environment, setting ambitious targets and establishing CE incentives. Network governance, by contrast, is focused on the collaborative aspect, engaging businesses, government agencies, research institutions, and civil society in a shared effort toward circular goals. This dual structure is essential for achieving the goals of a circular economy, as it marries the stability of public policy with the adaptability and innovation that comes from a diverse stakeholder coalition.

***For Planet Ark, this model provides an actionable blueprint to recommend to the Commission, particularly given Australia's current state of limited collaboration and the challenges our industry faces in adopting circular practices at scale.***

### *2.1.1 How Network Governance Can Benefit Australia*

A core insight from Cramer’s work is that network governance brings a **flexible, task-oriented approach** to circular economy initiatives. The four phases she outlines—preparation, planning, execution, and consolidation—highlight that while a central goal exists, the path to achieving it must be adaptable. This aligns with Australia’s need to transition across sectors and contexts, especially in resource-heavy industries. Australia’s capacity to tailor circular strategies to fit the needs of specific regions, communities, and industries is crucial, as a “one-size-fits-all” approach is unlikely to yield comprehensive success.

### *2.1.2 Collaboration and the Role of Transition Brokers*

Collaboration is an essential element of the CE transition and transition brokers, a central feature of network governance, play a vital role in facilitating and indeed orchestrating the system collaboration necessary while addressing conflicts between stakeholders. For Australia, where collaboration between industry, research, and public entities has historically been low, transition brokers could provide the necessary linkage to keep projects aligned with circular economy goals. This concept underscores Planet Ark’s belief in the importance of training, empowering and funding intermediaries who can coordinate between sectors, promote shared solutions, and expedite progress.

### *2.1.3 The Importance of Innovative Business Models*

To create a circular economy, Cramer suggests that stakeholders must develop business models that deliver benefits to network partners across the value chain. This resonates with Australia’s need to support industries with education in and enabling of the movement from linear to circular processes by creating economic value that is sustainable and incentivised. Planet Ark recommends that the government prioritise policies that stimulate such innovations, whether through funding, tax incentives, educational support, or by removing structural barriers that hinder circular investments. Again, there are examples available from the Netherlands to support this adoption.

### *2.1.4 Summary of recommendations*

By integrating Cramer’s principles into Australia’s approach, Planet Ark believes the government can better support a transition to a circular economy that is innovative, inclusive, and economically resilient. By adopting a governance model that blends public policy with network-driven collaboration, Australia can create a resilient, resource-efficient economy capable of leading in circular innovation Our submission recommends:

- Strengthening public governance frameworks to establish ambitious circular economy targets, backed by consistent policy support at all levels of government.
- Building network governance structures with trained, empowered and funded transition brokers to drive collaboration across value chains and sectors.
- Supporting the development of innovative, circular business models that provide economic value and encourage sustainable practices.

## **2.2 Product Stewardship and mandate EPR schemes based on CE principles**

Product stewardship via the creation of Extended Producer Responsibility Schemes (EPR) are an essential tool to building a circular economy in Australia by ensuring products are managed throughout their lifecycle. By holding producers accountable for products they place on the market, EPR drives designs that prioritise extended product life, repairability and recyclability,

keeping valuable resources in use. These frameworks encourage innovation, support local recycling industries, and reduce reliance on virgin resources, thus advancing Australia's sustainability goals while creating economic opportunities in the green sector. The OECD notes that EPR fees are often a small fraction of the product price, typically less than 1%. However, the exact percentage can vary depending on the product and the efficiency of the EPR system.

### *2.2.1 Recommendation*

Over the coming decade ensure that virtually all products have regulated EPR schemes based on circular economy principles with strong targets, and ensuring no industry free riders. The hierarchy of implementation should be based on a combination of volumes and toxicity of products.

## 2.3 Support for businesses especially SMEs

Businesses of all sizes will need assistance, but SMEs play a crucial role in the circular economy transition often driving localised, innovative solutions. They however have the least resources to be able to make the CE transition and yet will play vital role in virtually every value chain transition. Focussing the support on SMEs that represent 98% of businesses with resources and tools will facilitate the expansion of circular practices in diverse sectors.

### *2.3.1 Key recommendations:*

- **Establish a National Circular Economy Business Hub:** Develop in conjunction with existing CE advocacy organisations (such as the ACE Hub) a national hub offering technical assistance, access to funding, and business development services tailored to SMEs working within the circular economy. These services will interface with existing federal and state government support programs to enable the adoption of new business models developed as below.
- **Incentivise circular economy business models:** Introduce tax breaks, subsidies, or other financial incentives for businesses that adopt circular business models such as product-as-a-service, sharing economy platforms, and repair or refurbishment programs.
- **Expand training and education programs:** Facilitate training programs to upskill workers in circular economy practices, from sustainable product design, repair, resource recovery to remanufacturing. Examples include CIRCO from the Netherlands, [now in Australia](#).

## 2.4 Driving consumer and community engagement

Community knowledge and participation is critical to Australia advancing to a circular economy. By educating the public on circular economy principles and behaviours such as sustainable consumption, product reuse and repair, correct kerbside recycling practices, and active participation in product stewardship schemes this program can reduce contamination, increase recycling material recovery and support sustainable resource use. This is important as there is very low awareness of the volume of resources that go into the products we use. As an example, the typical smart phone of 0.2kg in weight that millions of Australia own, requires around 50-70kg of resources to be extracted from nature to be manufactured.

Currently, many Australians are unaware and untrained in proper recycling methods or the stewardship schemes available, leading to inefficiencies and economic challenges in the recycling sector. For example, the ARL Consumer Insights Report 2023 found that 50% of Australians find knowing what can and can't be recycled confusing.

Internationally, countries like Norway, Sweden, Denmark, Finland, Netherlands, Germany, Japan and South Korea have successfully invested in extensive long term public education campaigns, initially as part of their waste reduction and then circular economy strategies. These have resulted in an informed and motivated community with high recycling and EPR participation and low contamination rates. By adopting a similar model, Australia can build a strong, informed foundation for circular practices, empowering Australians to make sustainable choices that align with our nation's environmental goals.

#### 2.4.1 Key Recommendations:

- **Behaviour change and education:** To achieve similar impactful and lasting results as our OECD and regional colleagues we recommend that Australia develop and implements a long term nationally co-ordinated CE behaviour change and education program. To ensure the program's quality and results this should be informed by the best behaviour change knowledge and research and should be funded at a per capita level expenditure of a minimum of \$2pa over a sustained period of initially 10 years. This funding would come a combination federal and state governments with significant contributions from EPR schemes, reflecting a shared commitment to sustainability.
- **Support repair and reuse initiatives:** Fund and promote local repair facilities and second-hand marketplaces, enhancing access to circular options at the community level. Fund and support the increase of available courses at VET level particularly that teach repair and maintenance. Incentivise student completion of these courses in selected sectors.
- **Implement a national labelling system:** Introduce a label that inform consumers about the environmental impacts of products, similar to energy efficiency ratings, helping to guide purchasing decisions towards more circular products. Examples from the [French Repairability Index](#) labelling and inclusion of labelling requirements in the [Ecodesign Sustainable Products Regulation](#) are useful here.

## 3. Responses to your Information requests

### 3.1 Information request 1: Success stories

We have provided in each category some success story examples of organisations involved in circular economy activities – using the categories of narrowing, slowing and closing loops and regeneration. The examples highlight their business and environmental outcome, as well as the uptake levels, motivations, and effectiveness and costs of these activities where available. The examples are categorised by their most prominent category, though many of these could be classified in multiple categories as they also support other CE outcomes.

You can find more case studies on our [ACE Hub website](#) and we have attached a list of URLs in Appendix A in addition to other activities from a range of organisations for your convenience.

#### Narrowing Loops (Reducing material demand)

Interface (Modular carpet tiles): Offers modular carpet tiles made from recycled materials, allowing tiles to be replaced individually rather than replacing entire carpets. This extends the life of remaining product and reduces virgin material demand. They also offer a leasing product-as-a-service model.

- **Outcomes:** Reduced material use and waste generation.

- **Uptake:** High uptake in corporate and public sector projects.
- **Motivation:** Maintenance cost savings and environmental goals.
- **Effectiveness:** Interface's solution minimises replacement costs, though sustainable materials sourcing is initially more expensive.

Eagle Lighting (Modular lighting systems): Eagle Lighting produces modular, upgradeable lighting systems to extend fixture lifespans.

- **Outcomes:** Decreases need for full replacements in commercial spaces.
- **Uptake:** Strong demand from industrial and commercial clients.
- **Motivation:** Cost savings on lighting maintenance and sustainability.
- **Effectiveness:** Modular design reduces waste while maintenance costs are lower over time despite the initial investment.

### Slowing Loops (Extending product life)

Laserbond Ltd (Surface engineering): Applies advanced surface coatings to greatly extend the life of industrial equipment, reducing the need for new equipment.

- **Outcomes:** Decreased material demand in heavy industries like mining.
- **Uptake:** Growing adoption in resource-heavy sectors.
- **Motivation:** Reduced replacement costs and extended asset lifespan.
- **Effectiveness:** Laserbond's coatings significantly reduce maintenance and replacement expenses, though initial equipment costs for laser technology are substantial.

Brambles/CHEP (Pallet pooling): CHEP operates a reusable pallet pooling system, minimising single-use pallet demand.

- **Outcomes:** Reduces demand for new timber and plastic pallets, decreasing waste.
- **Uptake:** High adoption in supply chains across multiple sectors.
- **Motivation:** Cost-effective logistics and waste reduction.
- **Effectiveness:** Proven model with widespread scalability and significant reductions in pallet waste as they are returned to CHEP for repair or recycling

Second Life Solar Pty Ltd (Solar panel management): Panels that are taken out of service early due to financial benefits after say 7-10 years but still have 15 years+ life are being repurposed (with testing and refurbishments as necessary) on another project at greatly reduced cost. Only if they are not usable are they then recycled for the valuable materials.

- **Outcomes:** Reduces e-waste and resource demand for new panels.
- **Uptake:** Adoption among solar energy projects prioritising sustainability.
- **Motivation:** Cost savings from reuse recovery and compliance with recycling regulations.
- **Effectiveness:** Effective for reuse and material recovery, though transport and processing costs can be significant.

### Closing Loops (Recycling and reusing materials)

Mint Innovation Ltd (Biotech metal recovery): Mint Innovation employs biotechnology to recover precious metals like gold and other materials from motherboards in electronic waste.

- **Outcomes:** Reduces need for virgin mining and manages e-waste.



- **Uptake:** Adoption is growing among electronics recyclers and brandowners looking to maximise circularity of their material supply.
- **Motivation:** Value recovery from e-waste and sustainable recycling of ewaste.
- **Effectiveness:** Highly effective in metal recovery, but requires significant upfront investment for bioprocessing.

Licella Ltd (Chemical recycling of plastics): Licella’s Cat-HTR™ technology converts plastic waste back into oil, creating a recyclable feedstock for plastic production especially in packaging. Can also be applied to agricultural residue to produce sustainable aviation fuel but notes below refer to plastic feedstock.

- **Outcomes:** Reduced plastic waste and fossil fuel dependency in plastics.
- **Uptake:** Increasing interest from industries generating plastic waste especially soft plastics.
- **Motivation:** Compliance with EPR and recycling expectations especially as the technology is able to create food grade plastic packaging.
- **Effectiveness:** Successful in reducing plastic waste but somewhat dependent on plastic waste stream quality.

Samsara Eco (Plastic recycling with enzymes): Uses enzymes to break down plastics into reusable molecular components, enabling extended plastic lifecycle.

- **Outcomes:** Reduced waste and extended utility for plastic materials.
- **Uptake:** Increasing interest from consumer goods companies for sustainable packaging.
- **Motivation:** Pressure to meet environmental goals and reduce plastic waste.
- **Effectiveness:** Highly efficient in recycling plastics, though enzyme production costs are currently relatively high.

Close the Loop (Recycled content in roads): As one of number of CE activities, Close the Loop in partnership with Downer, creates roads from recycled plastics, waste printer toner, and glass. This initiative reduces demand for virgin resources, recycles waste products and increases road durability.

- **Outcomes:** These roads last longer and reduce reliance on raw materials.
- **Uptake:** Adoption by local governments has grown as councils aim to meet sustainability goals.
- **Motivation:** Councils are motivated by reduced environmental impact, cost and enhanced road performance.
- **Effectiveness:** Close the Loop reports significant growth in this product line.

### Regeneration (Using non-toxic, ecosystem-supportive materials)

Delorean Ltd (Bioenergy from organic waste): Through anaerobic digestion plants, Delorean converts organic material such as food waste and biosolids into bioenergy and biofertilisers, diverting waste from landfills and replacing fossil fuels and synthetic fertilisers.

- **Outcomes:** Reduced waste, pollution and greenhouse gas emissions, along with renewable energy generation.
- **Uptake:** Adopted by food processing, water and agricultural sectors.
- **Motivation:** Waste management and energy savings.

- **Effectiveness:** Delorean’s bioenergy projects offer an economical and sustainable waste-to-energy solution, though feedstock variability can impact efficiency.

Sea Forest Ltd (Seaweed cultivation for methane reduction in agriculture): Sea Forest cultivates *Asparagopsis*, a native seaweed that, when added to livestock feed, reduces methane emissions from cows by up to 90%.

- **Outcomes:** Significant reduction in methane emissions from agriculture, which is a major source of greenhouse gases.
- **Uptake:** Increasing adoption by dairy and cattle farms, especially as climate targets become more stringent.
- **Motivation:** Farmers and the agricultural industry are motivated by sustainability goals, regulatory pressure, and potential cost savings from carbon credits.
- **Effectiveness:** Proven effective in reducing agricultural methane emissions, though scaling up seaweed production to meet demand remains a logistical challenge.

Wide Open Agriculture (Carbon neutral and regenerative food production): Produces food using regenerative farming techniques, ensuring minimal environmental impact and promoting soil health.

- **Outcomes:** Reduced soil degradation, enhanced biodiversity, and lower carbon footprint in food production.
- **Uptake:** Strong uptake among environmentally conscious food businesses and consumers.
- **Motivation:** Retailers and consumers are increasingly looking for carbon-neutral and regenerative food sources.
- **Effectiveness:** Effective in reducing environmental impact of food production, although regenerative practices require ongoing soil and biodiversity monitoring.

Copar Pty Ltd (Sustainable packaging from agricultural waste): Manufactures sustainable packaging from agricultural by-products such as wheat straw, providing an alternative to traditional plastic and fibre-based packaging. Packaging is PFAS free and can be recycled or composted.

- **Outcomes:** Reduces plastic production from fossil fuels, supports circularity in agriculture, and adds value to agricultural residues.
- **Uptake:** Growing adoption in the food and retail sectors.
- **Motivation:** Companies are driven by sustainability targets and consumer demand for recyclable and biodegradable packaging.
- **Effectiveness:** Effective in helping to reduce plastic dependency, though input costs may vary based on agricultural waste availability.

## 3.2 Information request 2: Priority opportunities

### ***3.2.1 Opportunities in Australia to improve environmental and economic outcomes through greater adoption of circular economy activities.***

As included in 3.1 above, a range of opportunities exist to improve environmental outcomes that involve narrowing, slowing, closing loops and regenerating are already in play in Australia.

The important question is often, how do we measure the contribution of these organisations to a circular economy in Australia? Current mapping of measures focuses on material flow analysis; however, other measures can be adopted. The [United Nations Economic Commission for Europe](#) (UNECE) has compiled a list of indicators that are useful in determining how the effects of these circular economy solutions can be measured. These include number of jobs created through the adoption of a circular solution, number of reuse cycles the product has, business investment in innovation, as well as natural resource impacts.

We recommend reviewing the work of CSIRO in their report [Australia's comparative and competitive advantages in transitioning to a circular economy](#) of January 2024 to identify the analysis of which opportunities provide the greatest scope to improve outcomes.

### ***3.2.2 Analysis of which circular opportunities provide the greatest scope to improve environmental and economic outcomes in Australia and why***

We recommend reviewing the work of CSIRO in their report [Australia's comparative and competitive advantages in transitioning to a circular economy](#) of January 2024 to identify the analysis of which opportunities provide the greatest scope to improve outcomes.

We also refer to the CSIRO [Australian material flow analysis to progress to a circular economy](#) report of March 2024 for measures of material flow analysis in Australia and their impacts.

### ***3.2.3 Information on specific opportunities and risks for Australia resulting from international developments, including circular economy policy.***

As was seen during the COVID pandemic, Australia has significant supply chain exposure. With the loss of most of our sovereign manufacturing capacities, the country is at the mercy of international supply chains. These supply chains are challenged by geopolitical matters, as well as climatic and broader trading issues.

Some of the risks we have identified include the following:

- **EU trade impacts:** Australian businesses and government need to be aware of the [EcoDesign Sustainable Products Regulation](#) in the EU. This is increasingly applicable for most products put onto the European market. It is therefore applicable for anyone trading with the EU. Including a range of circular approaches, this could either put Australian business trading at risk if not able to comply by this new regulation. It could be the last straw for businesses trying to get into the EU who may consider the change 'too hard'. Both matters affect exports. The alternative outcome could be the regulation could drive local businesses to upskill and improve to comply. The risk is potential impacts to European trade from Australian companies.
- **Banning or reducing imports:** The introduction of import bans of poorly designed and environmentally damaging products (e.g. vehicles with high emissions and material footprint) will help consumers make better choices.
- **Banning hazardous chemicals:** These are often contained in new products and virgin materials, e.g. packaging, and they inhibit the ability to incorporate recycled content as they are difficult to separate as they are bound up in the material. This will allow upstream interventions and safeguard the ability to recycle materials safely.

- Pricing externalities:** The [European Investment Bank](#) shared at the World Circular Economy Forum in Helsinki, June 2023, they had already started pricing in environmental and social externalities into their lending portfolio. It is a practice that has been adopted since the 1990s but has taken greater emphasis in recent years. Australia is at risk of not keeping up with world leading multi-lateral lending practices without adopting an environmental and externality costs for procurement and for lending. One local solution is the [Planet Price](#) platform which is pricing externalities.

### 3.3 Information request 3: Hurdles and barriers

Hurdles and barriers that prevent access to the circular economy are reflected in the aforementioned CSIRO report on [Australia’s competitive advantage](#).

The ACE Hub conducts Australia’s only longitudinal research into the circular economy in Australia. Our [Circularity in Australian Business Report 2023](#) report surveyed 500 senior business decision makers. Of the barriers identified (Figure 1), lack of information was the most commonly cited.

More broadly, we see the following barriers commonly cited in our networks:

- Lack of government policy encouraging organisations to invest in service models versus product ownership models
- No right to repair legislation coming out of Productivity Commission report of 2021 to enable greater uptake of repair. Without the adoption of recommendations there is limited incentive for consumers or businesses to use repair as an important activity in a circular economy.
- Tax deductions or rebates, particularly for businesses, are geared towards new products through depreciation, not repaired, secondary, refurbished products. For consumers, no tax incentive such as a rebate is available to keep repairs front of mind when considering whether to replace with new.
- Manufacturers are enabled to have short product warranties, reducing inclination to offer repair beyond the life of the warranty.
- Lack of harmonisation across states and territories of what is considered a ‘resource’ available for recycling – many outdated policies need reviewing in line with circular economy business models.
- Businesses fear of being accused of greenwashing leads to green hushing in relation to promoting their circular economy activities.
- SMEs are not equipped with time, money or CE transition support to enable product line shifts to more circular approaches. Where education is available, small business owners are challenged to attend as they need operational cover to continue to run their business. Suggest education and training are supported by business owner relief to continue to trade (see section 2.3.1 for recommendations)



Figure 1: Perceived barriers to implementing circular economy within Australian businesses (CIAB by Planet Ark, 2023)

- Lack of community education on what constitutes a circular practice. For example, daily engagement with Facebook Marketplace or Ebay or sharing products with family/friends are circular practices. This needs to be communicated in a wide-reaching and consistent education program for behaviour change to change public perception and practice (see section 2.4.1 for recommendation).
- There is a lack of qualified or accredited technical knowledge experts who understand a truly circular approach to guide organisations. There is a need for an accreditation scheme for practitioners, similar to the AICD program for Directors.
- Businesses are not incentivised to invest in new circular business models as there is little request or requirement for new models. For example, there is a lack of procurement policies (both government and private sector) to encourage circular business model adoption in organisations (this excludes the recently released Environmentally Sustainable Procurement Policy by the federal Department of Environment - see section 3.4 for more detail).
- Repair is an important and often promoted activity in a circular economy. There is a risk of not developing, providing or encouraging education for repair services across a range of sector. Students also need encouragement to participate.
- Consumer products are not reflecting the full cost of the product – externalities need to be applied to all products to ensure a full life cycle impact is accounted for. Product Stewardship and EPR schemes can support this.
- With little to no oversight on what can and cannot be sold in Australian stores based on their full life cycle and ability to return at highest value in the economy, we will continue to have consumers who do not place priority on high performing products. Public attitudes need to be addressed, as per the consumer education campaign (see section 2.4.1).

### 3.4 Information request 4: Governments' role

As highlighted in Section 2 of our submission, there are a number of opportunities for government to support the circular economy transition in Australia.

The role of governments at all levels—national, state, territory, and local—is crucial in enabling and accelerating the transition to a circular economy in Australia. Governments can use a mix of policies, regulations, financial incentives, education, and infrastructure planning to support and catalyse this shift. The following response outlines the areas where government action is essential, drawing on specific suggestions and best practices from other countries.

#### 3.4.1 Enabling Circular Economy Activities Through Policy and Regulation

##### 1. Establishing financial incentives and mandates:

- Governments should provide both “carrots and sticks” to encourage investment in circular economy practices. Financial incentives, such as grants, tax credits, or low-interest loans, can help de-risk investments in circular economy initiatives. These incentives would particularly support small and medium enterprises (SMEs) in taking innovative leaps and scaling circular solutions, such as using sustainable materials, adopting product-as-a-service models, or investing in recycling infrastructure.
- Additionally, as recommended in our section 2 of our submission, mandatory EPR schemes for all products phased in over the next decade would shift the key responsibility of end-of-life management to producers, incentivizing companies to design products that are easier to repair, recycle, and disassemble.

##### 2. Adopting environmentally sustainable procurement policies will create demand driven circularity

- All state, territory and local governments and government-owned enterprises should adopt the Federal Government’s **Environmentally Sustainable Procurement Policy** to drive demand for circular products and services. By committing to purchase sustainably designed and recycled products, governments can increase investor confidence in circular innovations and foster a strong market for circular products.
- Once government has proven its effectiveness, the business sector could be required to adopt it with any necessary modifications for this sector. Commence with largest companies first as has been done with Greenhouse Gas emitters.

##### 3. Creating regulatory conditions that foster innovation:

- Regulatory frameworks should be reviewed and updated to eliminate obstacles to circular practices. For example, existing standards and codes may unintentionally discourage the use of recycled materials or modular designs.
- Streamlining approval processes for circular infrastructure, like recycling facilities or repair hubs, can accelerate the establishment of new circular business models. An approach modelled after the Netherlands’ **Versnellingshuis (Acceleration House)**, which provides coordinated support for circular business initiatives, would support transformation across industries.

#### 4. Promoting Education and Training:

- Education and training initiatives are essential to build a workforce equipped with skills in repair, maintenance, and circular design. Australia could emulate Belgium’s model, where construction students learn to assemble and disassemble structures, encouraging adaptive reuse of materials and structures.
- Training programs should also cover circular business models and systems thinking, ensuring that future professionals can identify value losses in supply chains and design systems to recover them.

#### 5. Facilitating Collaboration and Independent Transition Brokers:

- As described in detail in section 2 of our submission, Government-supported independent transition brokers could play a key role in connecting different actors within the circular economy, such as businesses, local governments, and community groups.
- These brokers would act as impartial facilitators to ensure that investments, partnerships, and initiatives align effectively and address systemic gaps. This approach has proven successful in the Netherlands and could be adapted to Australia to promote collaboration across sectors and regions.

#### 6. Planning for Circularity in Urban and Regional Development:

- Urban planning policies should incorporate designated spaces for circular economy activities. Local governments could integrate **repair cafes, community repair and training centres, and second-hand stores** into new developments, while industrial areas could be designed to encourage **industrial symbiosis**—where businesses use each other’s by-products as inputs.
- Planning circular activity spaces at the community level reduces waste, fosters local engagement, and minimises transportation emissions by keeping material flows regional.
- Developers should be required to adopt circular building designs in their housing designs, particularly where housing is of such an urgent priority. For example, designing housing for changing occupation needs, including design for disassembly, modularity and ease of maintenance.

#### 3.4.2 Addressing Current Barriers in Policy and Regulation

- Current policies may unintentionally hinder circular economy practices. Examples of these barriers include restrictions on the use of recycled materials in certain sectors, outdated building codes that do not support modular or circular designs, and inconsistent recycling and regulations across states. These are some of the biggest complaint areas we hear in our interactions with business. Harmonising these regulations and updating codes would help reduce friction and allow circular practices to scale more effectively across the country.
- A significant barrier to circular economy practices in Australia is the ACCC’s anti-competition legislation, which can unintentionally hinder collaboration among businesses on sustainability initiatives. Companies may be reluctant to share

resources, co-invest in recycling infrastructure, or collaborate on sustainable supply chains due to concerns about breaching anti-competition laws. This creates uncertainty and discourages partnerships that could yield environmental benefits. The ACCC recently released guidelines on environmental and sustainability claims, offering some clarity on acceptable forms of collaboration for environmental purposes. However, businesses still face limitations when navigating compliance risks, and further refinement of these regulations could help unlock greater collaborative efforts in the circular economy.

### 3.4.3 *Protecting Indigenous knowledge and facilitating First Nations involvement*

- Aboriginal and Torres Strait Islander knowledge systems have been sustainably managing land and resources for tens of thousands of years.
- Governments should engage with First Nations leaders to incorporate Indigenous knowledge into circular economy policies in ways that respect and protect cultural and intellectual property rights.
- Supporting Indigenous-led initiatives and businesses in resource management, agriculture, and environmental stewardship would not only honour this knowledge but also contribute to innovative circular practices grounded in sustainability.
- Some suggested recommendations include:
  - **Integrating traditional land management techniques:** Indigenous fire management, often referred to as “cool burning” or cultural burning, is an example of a traditional practice that has gained recognition for its environmental benefits. This technique, used by groups such as the Firesticks Alliance, helps reduce fuel loads, prevent intense bushfires, and enhance biodiversity by promoting regrowth of native species. Incorporating this knowledge into national land management policies could reduce fire risks and regenerate ecosystems – a key principle of the circular economy. For instance, the Western Australian government has partnered with Indigenous groups to use these fire practices in conservation areas, achieving both environmental and cultural outcomes.
  - **Supporting Indigenous-led regenerative agriculture:** Indigenous agricultural practices, such as cultivating native grains like kangaroo grass, wattle seeds, and native rice, offer a sustainable alternative to conventional crops. These plants are well-suited to Australia’s arid climate and have lower water requirements, making them resilient to climate change. Companies like Black Duck Foods, focus on Indigenous-led regenerative farming using native crops. Government support for these ventures could foster a market for native foods, improve biodiversity, and provide economic opportunities for Indigenous communities.



## Appendix A: Case study URLs

These are drawn from this website link: <https://www.acehub.org.au/knowledge-hub/case-studies/all>

Arden	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/arden-precinct">https://www.acehub.org.au/knowledge-hub/case-studies/arden-precinct</a>
Bingo	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/bingo-industries">https://www.acehub.org.au/knowledge-hub/case-studies/bingo-industries</a>
Bardee	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/bardee">https://www.acehub.org.au/knowledge-hub/case-studies/bardee</a>
Bettercup	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/bettercup">https://www.acehub.org.au/knowledge-hub/case-studies/bettercup</a>
Brisbane Tool Library	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/brisbane-tool-library">https://www.acehub.org.au/knowledge-hub/case-studies/brisbane-tool-library</a>
Chep	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/chep">https://www.acehub.org.au/knowledge-hub/case-studies/chep</a>
CHG Meridien	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/chg-meridien">https://www.acehub.org.au/knowledge-hub/case-studies/chg-meridien</a>
Cercle	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/cercle">https://www.acehub.org.au/knowledge-hub/case-studies/cercle</a>
Ballarat	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/city-of-ballarat">https://www.acehub.org.au/knowledge-hub/case-studies/city-of-ballarat</a>
Bendigo	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/city-of-greater-bendigo">https://www.acehub.org.au/knowledge-hub/case-studies/city-of-greater-bendigo</a>
Close the Loop	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/close-the-loop">https://www.acehub.org.au/knowledge-hub/case-studies/close-the-loop</a>
Compost Connect	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/compost-connect">https://www.acehub.org.au/knowledge-hub/case-studies/compost-connect</a>
Dsmile	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/dsmile">https://www.acehub.org.au/knowledge-hub/case-studies/dsmile</a>
Evee	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/evee">https://www.acehub.org.au/knowledge-hub/case-studies/evee</a>
Foundling	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/found:ling_reusery">https://www.acehub.org.au/knowledge-hub/case-studies/found:ling_reusery</a>
Farmwall	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/farmwall">https://www.acehub.org.au/knowledge-hub/case-studies/farmwall</a>
Fixable	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/fixable">https://www.acehub.org.au/knowledge-hub/case-studies/fixable</a>
Forkful	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/forkful">https://www.acehub.org.au/knowledge-hub/case-studies/forkful</a>
Fungi	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/fungi-solutions">https://www.acehub.org.au/knowledge-hub/case-studies/fungi-solutions</a>
Givit	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/givit">https://www.acehub.org.au/knowledge-hub/case-studies/givit</a>
GoGet	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/goget">https://www.acehub.org.au/knowledge-hub/case-studies/goget</a>
Gold Coast Tool Library	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/gold-coast-tool-library">https://www.acehub.org.au/knowledge-hub/case-studies/gold-coast-tool-library</a>
Green Connect	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/green-connect">https://www.acehub.org.au/knowledge-hub/case-studies/green-connect</a>
GreenChair	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/greenchair">https://www.acehub.org.au/knowledge-hub/case-studies/greenchair</a>
HP Ink	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/hp-instant-ink">https://www.acehub.org.au/knowledge-hub/case-studies/hp-instant-ink</a>
Hume	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/hume-city-council">https://www.acehub.org.au/knowledge-hub/case-studies/hume-city-council</a>
HJO	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/hunter-joint-organisation">https://www.acehub.org.au/knowledge-hub/case-studies/hunter-joint-organisation</a>
Huskee	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/huskee">https://www.acehub.org.au/knowledge-hub/case-studies/huskee</a>
Juc Surf	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/juc-surf">https://www.acehub.org.au/knowledge-hub/case-studies/juc-surf</a>
Keepcup	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/keepcup">https://www.acehub.org.au/knowledge-hub/case-studies/keepcup</a>

Kua Coffee	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/kua-coffee">https://www.acehub.org.au/knowledge-hub/case-studies/kua-coffee</a>
Lake Mac	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/lake-macquarie-city-council">https://www.acehub.org.au/knowledge-hub/case-studies/lake-macquarie-city-council</a>
Little Droppings	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/little-droppings">https://www.acehub.org.au/knowledge-hub/case-studies/little-droppings</a>
Original Engine Company	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/original-engines-co">https://www.acehub.org.au/knowledge-hub/case-studies/original-engines-co</a>
Outland Denim	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/outland-denim">https://www.acehub.org.au/knowledge-hub/case-studies/outland-denim</a>
Packamama	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/packamama">https://www.acehub.org.au/knowledge-hub/case-studies/packamama</a>
Project Catalyst	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/project-catalyst">https://www.acehub.org.au/knowledge-hub/case-studies/project-catalyst</a>
QQT	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/quay-quarter-tower">https://www.acehub.org.au/knowledge-hub/case-studies/quay-quarter-tower</a>
Reco	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/reco">https://www.acehub.org.au/knowledge-hub/case-studies/reco</a>
Replated	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/replated">https://www.acehub.org.au/knowledge-hub/case-studies/replated</a>
Reground	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/reground">https://www.acehub.org.au/knowledge-hub/case-studies/reground</a>
Revolve	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/revolve-recycling">https://www.acehub.org.au/knowledge-hub/case-studies/revolve-recycling</a>
Samsara Eco	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/samsara-eco">https://www.acehub.org.au/knowledge-hub/case-studies/samsara-eco</a>
Sharewaste	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/sharewaste">https://www.acehub.org.au/knowledge-hub/case-studies/sharewaste</a>
Sustainable Salons	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/sustainable-salons">https://www.acehub.org.au/knowledge-hub/case-studies/sustainable-salons</a>
Coreo sisters	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/the-circular-experiment">https://www.acehub.org.au/knowledge-hub/case-studies/the-circular-experiment</a>
Thread Together	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/thread-together">https://www.acehub.org.au/knowledge-hub/case-studies/thread-together</a>
Tiverton	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/tiverton-sanctuary">https://www.acehub.org.au/knowledge-hub/case-studies/tiverton-sanctuary</a>
Underwear for Humanity	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/underwear-for-humanity">https://www.acehub.org.au/knowledge-hub/case-studies/underwear-for-humanity</a>
Upcycled glass	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/upcycled-glassware">https://www.acehub.org.au/knowledge-hub/case-studies/upcycled-glassware</a>
Upparel	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/upparel">https://www.acehub.org.au/knowledge-hub/case-studies/upparel</a>
Worn Up	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/worn-up">https://www.acehub.org.au/knowledge-hub/case-studies/worn-up</a>
Xframe	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/xframe">https://www.acehub.org.au/knowledge-hub/case-studies/xframe</a>
Yarrabilba	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/yarrabilba">https://www.acehub.org.au/knowledge-hub/case-studies/yarrabilba</a>
Yume	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/yume">https://www.acehub.org.au/knowledge-hub/case-studies/yume</a>
Zero Co	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/zero-co">https://www.acehub.org.au/knowledge-hub/case-studies/zero-co</a>
Ewater systems	<a href="https://www.acehub.org.au/knowledge-hub/case-studies/ewater-systems">https://www.acehub.org.au/knowledge-hub/case-studies/ewater-systems</a>

In addition to these case studies, we submit the following as examples of projects already in place that represent a range of activities:

- Built – design for disassembly guide: <https://www.built.com.au/news/how-to-write-a-building-disassembly-plan/>
- Built Head Office adaptive reuse: <https://thefifthestate.com.au/innovation/building-construction/built-and-nuveen-fuse-old-with-new-for-sydney-cbd-office-tower/>

- Green Collect – social enterprise focused on recovery/repair - <https://www.greencollect.org/>
- ABCH textiles recovery and reuse: <https://abch.world/>
- Clothing circularity project: Country Road, ABCH, RMIT – report due by December 2025 – contact, Prof Alice Payne (RMIT) or Erika Martin (Country Road)
- LifeCycle+ technology recovery and refurbishment - <https://lifecycle.plus/>
- Tech Shed Canberra – Technology recovery and refurbishment: <https://canberracitycare.org/tech-shed/>
- Reconnect Project – Technology recovery and refurbishment: <https://thereconnectproject.com.au/>
- King Furniture – Furniture for generations: <https://www.kingliving.com.au/blog/heirloom-furniture-built-to-last/?srsltid=AfmBOoq9yHoA8U2bhtNSBl6HUHRZ4jIXRrcUISJyKDbvMS61JiQDj3Xe>
- Hire and Rental Association of Australia – equipment hire: <https://hria.com.au/> (reducing new product development and sale)