



# Australia's circular economy: Unlocking the opportunities

## Interim report Overview

This is an interim report prepared for further public consultation and input. The Commission will finalise its report after these processes have taken place.

**The Productivity Commission acknowledges the Traditional Owners of Country throughout Australia and their continuing connection to land, waters and community. We pay our respects to their Cultures, Country and Elders past and present.**

## **The Productivity Commission**

The Productivity Commission (PC) is the Australian Government's independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians. Its role, expressed most simply, is to help governments make better policies, in the long-term interest of the Australian community.

The PC's independence is underpinned by an Act of Parliament. Its processes and outputs are open to public scrutiny and are driven by concern for the wellbeing of the community as a whole.

For more information, visit the PC's website: [www.pc.gov.au](http://www.pc.gov.au)

© Commonwealth of Australia 2025



With the exception of the Commonwealth Coat of Arms and content supplied by third parties, this copyright work is licensed under a Creative Commons Attribution 4.0 International licence. In essence, you are free to copy, communicate and adapt the work, as long as you attribute the work to the PC (but not in any way that suggests the PC endorses you or your use) and abide by the other licence terms. The licence can be viewed at: <https://creativecommons.org/licenses/by/4.0>.

The terms under which the Coat of Arms can be used are detailed at: [www.pmc.gov.au/government/commonwealth-coat-arms](http://www.pmc.gov.au/government/commonwealth-coat-arms).

Wherever a third party holds copyright in this material the copyright remains with that party. Their permission may be required to use the material, please contact them directly.

An appropriate reference for this publication is:  
Productivity Commission 2025, *Australia's circular economy: Unlocking the opportunities*, Interim report, Canberra, March.

Publication enquiries:  
Phone 03 9653 2244 | Email [publications@pc.gov.au](mailto:publications@pc.gov.au)

## Opportunity for comment

The PC thanks all participants for their contribution to the inquiry and now seeks additional input for the final report.

You are invited to examine this interim report and comment on it by written submission/brief comment to the PC, preferably in electronic format.

Further information on how to provide a submission/brief comment (and the submissions close date) is included on the inquiry website: [pc.gov.au/inquiries/current/circular-economy](http://pc.gov.au/inquiries/current/circular-economy).

The PC will prepare the final report after further submissions have been received and further discussions with participants have been held.

For the purposes of this inquiry and interim report, in accordance with section 40 of the *Productivity Commission Act 1998* the powers of the PC have been exercised by:

Joanne Chong                                      Presiding Commissioner

Alison Roberts                                    Commissioner



---

# Contents

<b>Opportunity for comment</b>	<b>iii</b>
<b>Overview</b>	<b>1</b>
Key points	2
Despite some uptake, Australia's circular economy progress has been slow	4
There are opportunities for governments to address barriers to circularity	5
Reducing regulatory barriers would encourage circular activities	7
Coordination between industry and by governments could be improved	8
Addressing information gaps would support decision making	11
The PC is seeking further information about its proposed reform directions	12
<b>Recommendations, reform directions and information requests</b>	<b>13</b>

The full interim report can be found at <https://www.pc.gov.au/inquiries/current/circular-economy/interim>



# Overview

## Key points

- \* A circular economy aims to use materials and products more sustainably and efficiently, with economic, environmental and social benefits.**
  - Circular activities include designing products to use less materials, extending product lifespans via reuse and repair, and recycling and recovering materials to reduce waste.
  - The benefits of circularity include more efficient use of the planet's finite stock of natural capital to support economic and productivity growth; reduced harms to the environment, climate and biodiversity; and improved social outcomes such as health, amenity and intergenerational equity.
  - Some circular activities reduce materials use in ways that simultaneously benefit the economy, the environment and society. Others have trade-offs, such as lowering materials use but increasing carbon emissions (for example, if recycling requires transporting waste long distances).
- \* Despite some uptake of circular economy opportunities in Australia, progress has been slow.**
  - Australia's materials productivity, circularity rate and waste recovery rate have increased slightly over the past decade.
  - Barriers to adopting circular economy opportunities include high costs; prescriptive, outdated or inconsistent regulations; coordination challenges and difficulties diffusing circular innovations; and limited practical information on circular opportunities.
- \* Updating regulations to level the playing field for newer or less widespread technologies and capabilities would support the uptake of circular activities. Harmonising inconsistent regulations between jurisdictions would lower administrative costs and burdens for businesses undertaking circular activities across Australia.**
- \* Governments can facilitate coordination and innovation diffusion by supporting information exchange platforms, adopting challenge-based innovation funding models, brokering businesses' engagement with regulatory processes, and leveraging sustainable procurement policies and place-based initiatives. The Australian Government's current leadership and coordination of product stewardship schemes could be expanded to products with higher-risk and/or higher-value waste streams.**
- \* More information would enable better decisions about circular opportunities. For example, at the consumer level, product labelling schemes on reparability and durability would help people to make more informed purchases of sustainable products. At a higher level, monitoring the outcomes associated with materials use and circular activities would help governments and businesses identify opportunities and measure improvements.**

A circular economy uses materials in more sustainable and efficient ways. Traditionally, economic activity has followed a linear 'take, make, use, dispose' model: raw materials are extracted, transformed into products, consumed, then disposed of as waste. By contrast, a circular economy aims to meet human needs with fewer materials, reducing the environmental impacts and costs of economic activity.

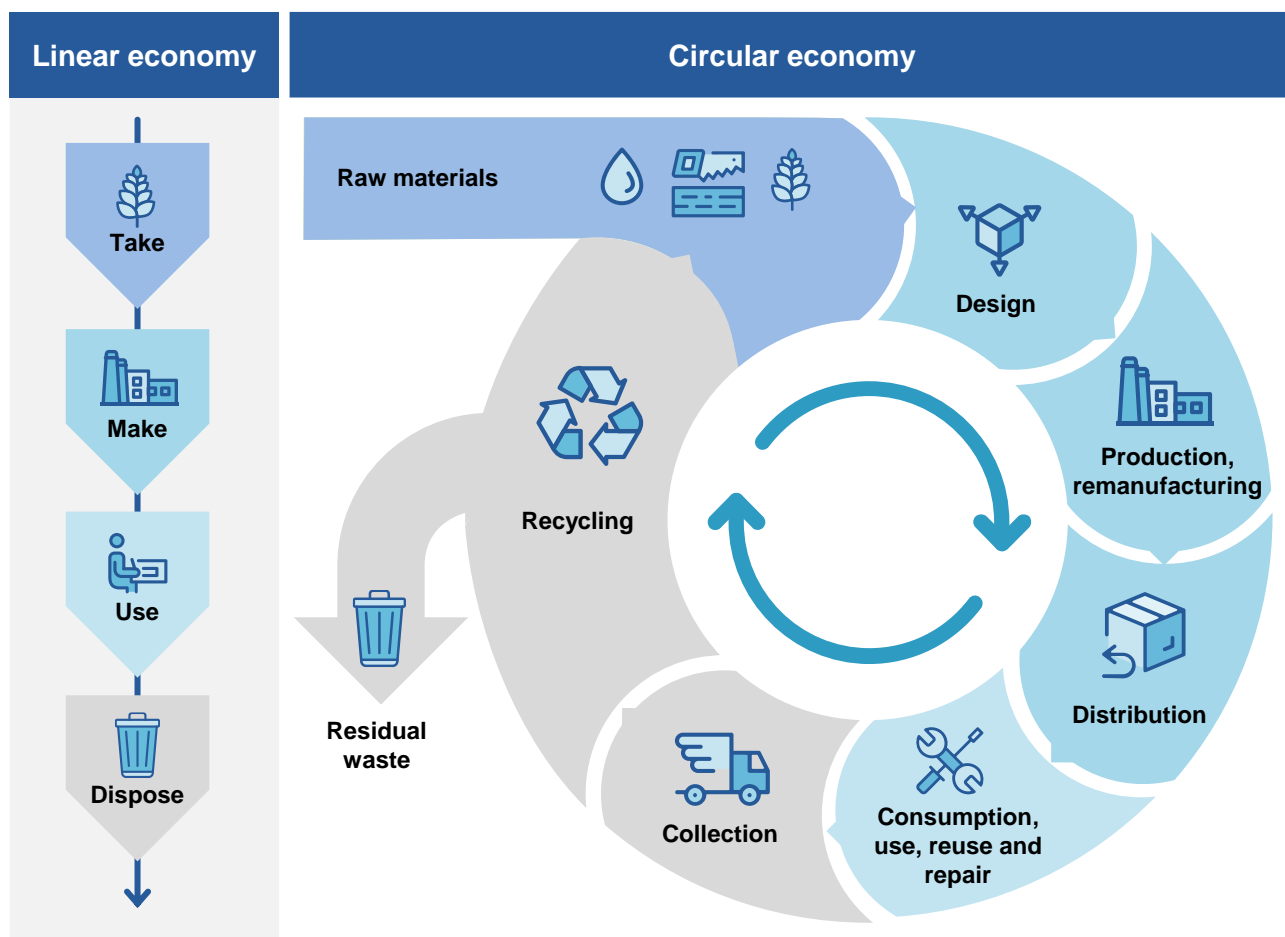
Circular economy activities span the entire product life cycle and include designing products to use less materials ('narrowing material loops'); extending the time that products are consumed via reuse and repair ('slowing material loops'); and recycling and recovering materials ('closing material loops') (figure 1).



Increased circularity has economic and productivity benefits by more efficiently using the planet’s finite stock of natural capital (materials) to support our growing population and economy. And it reduces the harms to the environment, the climate and biodiversity associated with producing and consuming things. These in turn contribute to social benefits, such as better health and amenity, more sustainable development and fairer outcomes between generations.

Circular economy practices are not new in Australia. For more than 60,000 years, Aboriginal and Torres Strait Islander people have held deep cultural, social, environmental, spiritual and economic connections to Country, and their knowledges and practices have sustained the health of Country. These holistic, place-based understandings that emphasise connections and relationships are a powerful contribution to concepts such as a circular economy. Some governments have policies that promote the application of Aboriginal and Torres Strait Islander knowledges, and support their participation in circular economy opportunities in ways that benefit communities and respect cultural and intellectual property rights. However, in practice, governments have some way to go on enabling true partnerships to achieve these aims.

**Figure 1 – Comparing the circular and linear economies**



## **Despite some uptake, Australia's circular economy progress has been slow**

Some households and businesses are already seeking opportunities to reduce their materials use, motivated by financial or commercial reasons. For example, households can save money by slowing material loops, and repairing or reusing objects until the end of their life rather than replacing them prematurely. And businesses that narrow material loops by designing and manufacturing products that use less materials can reduce input and waste disposal costs. However, these savings need to be weighed against the cost of adopting more circular approaches, such as repair costs or the time and investment required to implement new production processes or business models.

Household and business behaviours are also shifting to incorporate sustainable practices due to concern for the environment and future generations, or other sustainability reasons. A 2024 consumer survey found that 96% of respondents engaged in at least one sustainable practice in the last three months, though price and quality continue to be the top drivers of purchases. And businesses are increasingly adopting and reporting on environmental, social and governance principles. Almost all (98%) ASX100 companies published sustainability reports in 2023, and as of January 2025 climate-related reporting is mandatory for large companies. These shifts towards sustainability reflect changing societal expectations, emerging evidence from academic studies on the benefits and costs of sustainable practices, and government policies that seek to limit environmental harms.

All levels of government have policies in place that support the circular economy.<sup>1</sup> In general, the Australian Government is responsible for national legislation, strategies and policy frameworks, and provides national leadership for initiatives that span across jurisdictions or industries (such as product stewardship schemes). State and territory governments focus on waste management and resource recovery, and play an important enforcement role for environmental regulations. Local governments typically provide waste management services and manage infrastructure, and promote awareness among local residents. And all levels of governments provide financial incentives for circular activities that narrow, slow and close material loops, including direct funding for adopting innovative practices and via sustainable procurement policies.

Until recently, government policies have tended to centre on recycling and waste management. But across all levels of government, there has been an increasing shift to incorporate earlier parts of the product life cycle. The Australian Government released a national circular economy framework in December 2024, which broadens thinking on Australia's circular economy beyond an end-of-product life focus. The framework notes that governments have an important role to set the direction and provide supporting foundations in Australia's transition to greater circularity.

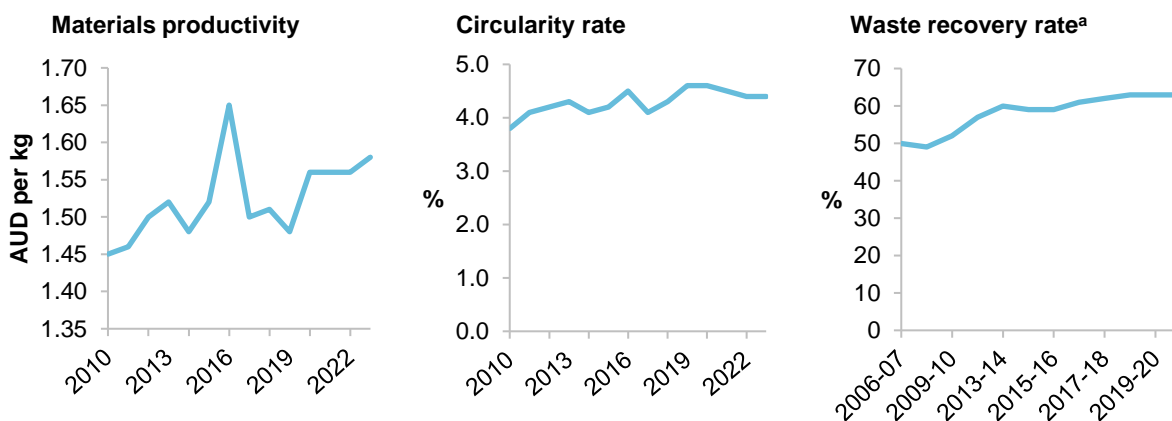
But progress on a circular economy in Australia has been slow, despite the increasing focus on sustainability and government policy initiatives. Measuring the circular economy is challenging because of the range of activities and impacts covered. Existing indicators tend to focus on the total weight of materials used and

---

<sup>1</sup> Some policies directly target materials use and waste, such as waste levies on landfill. Others are aimed at reducing environmental impacts more generally and encourage greater circularity where objectives are complementary, including climate change policies (such as the Renewable Energy Target, Safeguard Mechanism, Australian Carbon Credit Unit Scheme, Capacity Investment Scheme and New Vehicle Efficiency Standard), water policy (such as the National Water Initiative) and sector-specific policies (such as in construction and mining). Several of these policies aim to put a price on the environmental costs associated with waste or, more generally, on emissions and other impacts. This seeks to address the issue that producers and consumers have not typically fully paid for these environmental costs in the past under more linear supply chains and models of materials use.

consumed. These indicators suggest that there have been small increases in Australia's materials productivity, circularity rate and waste recovery rate over the past decade (figure 2).<sup>2</sup> Australia's materials productivity of US\$1.10 lags the OECD average of US\$2.50, though this is largely explained by the dominance of materials-intensive sectors in the Australian economy. Materials productivity within sectors in Australia is on par with other OECD countries such as Japan, the Netherlands and Canada.

**Figure 2 – Circular economy indicators in Australia**



a. Waste recovered for recycling, reuse or energy; data unavailable for 2007-08, 2011-12 and 2012-13.

## There are opportunities for governments to address barriers to circularity

Households and businesses can face barriers to circularity. Some circular practices are costly to adopt, as they may require investing in new technology, paying for different inputs or transport, operating at a certain scale, or accessing more expensive finance to fund projects perceived as high risk. In addition, prescriptive, outdated or inconsistent regulations sometimes prevent businesses from implementing more circular practices. Lack of information can also make it hard for households and businesses that are interested in circularity to make sustainable choices. And as many circular economy activities require coordination across businesses, governments and/or households, difficulties building connections between relevant stakeholders and sharing knowledge about best practice standards present barriers to greater circularity.

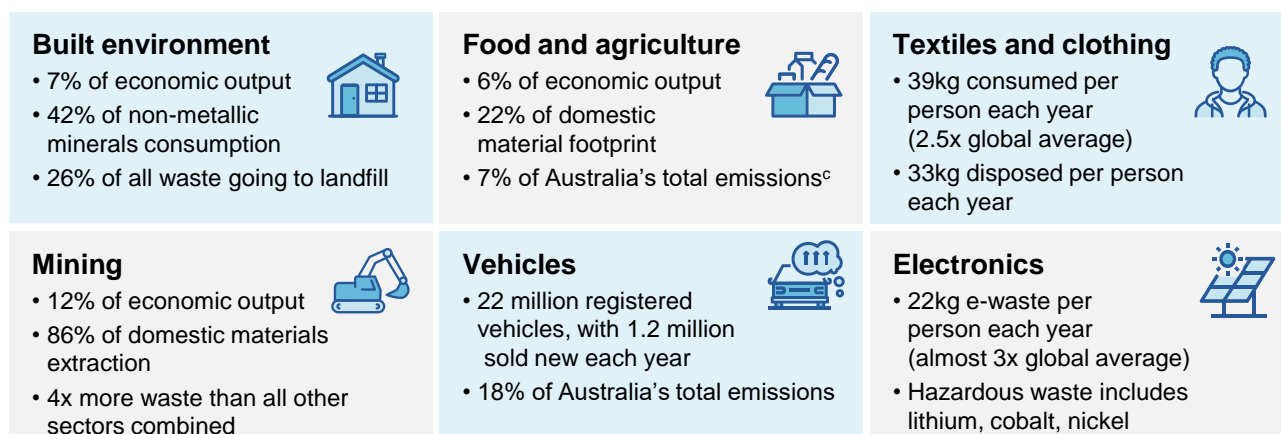
Governments can improve their policy settings to address some of these barriers. In doing so, their aim is not to achieve 100% circularity – there are trade-offs to circular activities, and a system where all materials are circulated indefinitely would not be economically, environmentally or socially optimal. And even with the right government policies in place, some circular opportunities may still be too costly for businesses and households to take up. But governments can support progress by reducing unnecessary regulatory frictions or burdens, while still maintaining policy settings with appropriate safeguards and pricing of environmental costs. Governments also have a role in facilitating coordination and improving information provision, to enable businesses and households to use materials in ways that maximise net benefits to the community.

<sup>2</sup> Materials productivity is the amount of economic value (measured by GDP) generated from a unit of materials used (measured by the weight of domestic materials consumption). The circularity rate is the proportion of non-virgin or recycled materials used against overall materials used. The waste recovery rate is the proportion of waste that is diverted from landfill and reused, recycled or used in waste-to-energy activities.

The PC has been asked to examine priority opportunities to improve materials productivity in ways that benefit the economy and environment, and policies to address barriers to achieving them. We have identified priorities in particular sectors, products and supply chain segments based on three broad considerations: environmental and economic significance of the materials used, applicability of opportunities to Australia (including behaviours and practices that Australian governments can more readily influence), and whether there are viable policies to reduce barriers to taking up opportunities. This interim report explores opportunities and potential policy reforms in six priority areas identified using this framework (figure 3).

- The **built environment**, comprised of buildings and infrastructure, involves large amounts of materials, waste and emissions in its construction. Priority opportunities for circularity focus on modern construction methods and using recycled materials, which could significantly reduce materials use and have scope for increased adoption.
- **Food and agriculture** represent a large share of Australia's economic output and exports. The sector is one of the largest users of materials for domestic production, generating significant emissions and affecting biodiversity, water and land health. Food waste and disposal occurs at all stages of the product life cycle, so priority opportunities are aimed at recovery and higher-value uses of food waste.
- **Textiles and clothing** production, consumption and disposal have a range of negative environmental impacts including on emissions, biodiversity, soil health and water quality. Australians are the biggest per-capita consumers of clothing in the world. However, because most of these products are imported, priority opportunities focus on consumption rather than production.
- **Mining** is one of the Australian economy's largest sectors by output. It accounts for the majority of domestic materials extraction and produces more waste than all other sectors combined. Mining companies have widely adopted circular activities in minerals exploration, extraction and processing, so priority opportunities relate to mining waste and alternative post-mining land uses.
- **Vehicles** are a sizeable contributor to emissions and materials use, with nearly as many vehicles as people in Australia. However, Australia has a very small domestic vehicle manufacturing industry and does not have significant influence on global manufacturers' decisions due to our small market size. As such, priority opportunities focus on reuse and recycling of vehicle components such as tyres and electric vehicle batteries.
- **Electronics** generate large waste streams with highly valuable and/or hazardous materials that pose environmental and safety risks. The volume of e-waste generated from lithium-ion batteries and solar photovoltaic (PV) systems is expected to increase significantly. Priority opportunities are aimed at improving recovery and recycling of materials in these products.

**Figure 3 – Six priority areas explored in this interim report<sup>a</sup>**



a. Statistics show contribution and impacts in Australia. b. Built environment statistics are for the construction sector. c. Emissions statistics are for direct (scope 1) emissions.

## Reducing regulatory barriers would encourage circular activities

Circular economy opportunities are diverse and exist across many sectors, locations and processes. As such, businesses pursuing these opportunities are affected by numerous regulations (such as health, environmental and planning regulations).

**Some existing regulations and policies favour more linear processes or limit the adoption of circular practices**, and updating these would level the playing field for newer or less widespread technologies and capabilities that improve materials productivity. Regulations are necessary to reduce or mitigate against the risks of adverse outcomes and engender community trust. However, they should be set and enforced in a way that minimises unnecessary burdens on businesses demonstrating compliance, and without disadvantaging those seeking to adopt innovative circular practices. These innovations contribute to economic growth and diversity by enabling new and more sustainable production processes and business models, beyond traditional linear practices. This interim report identifies several opportunities to update existing regulations and policies.

- Prescriptive standards governing construction can limit the narrowing of material loops by constraining adoption of more sustainable design and material-efficient technologies, such as prefabrication. Prescriptive building standards can also limit the use of recycled materials in public infrastructure projects, such as roads, reducing businesses' ability to close material loops. Governments could work with industry and stakeholders such as Standards Australia to update standards for using recycled materials in construction, and target standards around performance rather than prescription to avoid unnecessarily limiting the use of modern construction methods.
- Regulations on using anaerobic digestion to convert food and other organic waste into energy (such as biogas) limit the adoption of this technology. Governments could develop certifications and/or update carbon reporting methodologies for biogas derived from anaerobic digestion and drawn from shared infrastructure so that the environmental benefits of this energy source are better priced. Improving other regulatory settings, such as waste classifications and zoning, could also facilitate uptake.
- Approval requirements and regulations in mining can discourage companies from closing material loops by extracting residual minerals from their waste via tailings valorisation, or repurposing old mine sites for higher-value uses with broader regional benefits. A national assessment of state-based mining regulations could identify and reduce barriers to reprocessing mining waste and repurposing mine sites.

Any regulatory changes would need to balance environmental and economic risks and benefits, and consider potential impacts on the compliance load for businesses and enforcement burden for different levels of government. Changing regulations to enable the pursuit of circular opportunities in a way that has unintended negative outcomes could lower community support and wellbeing.

Further, **inconsistent regulations across different jurisdictions create additional costs** for businesses operating across state and territory borders. Different settings for different jurisdictions can be justified where local environments, activities and preferences differ. But in other cases, jurisdictional regulations could be harmonised – particularly where the differences between states and territories are definitional or administrative, rather than substantive or relating to outcomes. Streamlining these administrative inconsistencies would reduce the regulatory burden on businesses with national operations, and reduce frictions for businesses deciding where or whether to operate, therefore lowering barriers to productivity growth. This interim report identifies several opportunities for improving consistency, some of which Australian, state and territory governments are already considering.

- There are inconsistent bans on lithium-ion battery disposal, recycling and classification, even though these batteries' hazardous nature and fire risk in landfill are similar throughout jurisdictions across Australia.
- Different states and territories have different specifications on allowable content for recycled materials in infrastructure construction projects, but settings can be based on the same data and industry standards.
- Inconsistent waste classifications, including on organics and e-waste, present challenges for businesses with recycling activities across state and territory borders. Moreover, products made using recycled waste as inputs can be classified as waste in some jurisdictions, further increasing costs and limiting market access for businesses selling these circular products. The Heads of Environment Protection Authorities (EPA) Strategic Plan includes an action to align waste classifications, as far as practicable.
- Kerbside recycling requirements vary across and within jurisdictions, contributing to increased contamination of recycling streams and lowering the value of recycled materials. Governments are working together on harmonising requirements under the National Kerbside Collections Roadmap, following in-principle agreement from the Environment Ministers' Meeting.

Intergovernmental coordination is required to work out the detail on what settings regulations should be harmonised to, and how. This could leverage existing coordination mechanisms such as Environment Ministers' Meetings, the Heads of EPA alliance of environmental regulators, and/or departmental officer-level communities of practice. Different forums could be relevant in contributing to different aspects of the harmonisation process. For example, regulators could provide technical expertise, while government decision makers would be required to make policy decisions. Alternatively, if existing arrangements are not enough, governments could create a new interjurisdictional body dedicated to circular economy harmonisation efforts – as was suggested in the Circular Economy Ministerial Advisory Group's final report.

## **Coordination between industry and by governments could be improved**

Many circular economy opportunities are enabled by coordination and collaboration between stakeholders. For example, circular practices can rely on businesses creating new supply chains or linkages with other businesses to exchange materials and learnings. But an individual business may face difficulties building these connections due to lack of knowledge, time or funds. And navigating complex regulatory processes can require coordination and information provision across several levels and departments of government.

**Government-facilitated coordination supports greater uptake of circular activities and innovations** by lowering coordination costs for an individual business. This not only improves circularity and materials productivity, but also creates opportunities for businesses to diversify their production processes and build capability in sustainable practices, generating both economic and environmental benefits. While some circular technologies and practices are eligible for existing grant funding, this interim report suggests that governments could encourage collaboration across the supply chain using challenge-based innovation funding models. Governments could also explore other avenues for coordination and innovation diffusion, such as building on trials of digital platforms that enable connections between waste producers and users to close material loops, and addressing coordination issues between food donors and charities (such as transport and storage) that are currently limiting food waste rescue.

Initiatives could involve governments partnering with other stakeholders, including local community organisations, research bodies or industry associations. For example, governments can facilitate connections between academia and industry that provide new opportunities to commercialise research. Some partnerships are already exploring circular opportunities, such as the Collaborate to Thrive program

between Hume City Council, Victoria University and Circular Economy Victoria, and Shoalhaven City Council partnering with the UNSW SMaRT Centre to improve recycling infrastructure.

In addition, governments can help businesses to navigate regulatory complexity by supporting coordination or 'brokering' services. Some businesses seeking to pursue circular opportunities have used private consultants to assist with regulatory approvals across multiple departments and levels of government, with positive results, but not all businesses are aware of or can access private services. Governments can work directly with businesses seeking regulatory approvals to make the process as efficient as possible. For example, Container Exchange Queensland worked closely with the Queensland Government to overcome regulatory constraints and align with evolving state and national regulations. This interim report suggests that there could be productivity gains from governments supporting businesses to navigate regulations, either by directly engaging with businesses or leveraging existing brokering services or industry partnerships.

Government procurement provides another channel for facilitating coordination between businesses and with government, particularly where the government is a large purchaser of a product or service, such as public infrastructure. Several governments have sustainable procurement policies that cover circular practices. But relying solely on procurement has limitations: it takes time for suppliers to adopt and demonstrate changes, government decision makers need to build understanding of new requirements, and the broad range of procurement objectives creates additional administrative burden and potentially increases the costs of goods and services purchased by governments.

Programs that support and build on sustainable procurement policies enhance the impact of these policies and promote connections between and within government and industry. For example, in Victoria, the ecologiQ program accompanying the Recycled First Policy facilitates connections between infrastructure projects, businesses producing recycled materials and government decision makers. It promotes information sharing between government and businesses, builds confidence in innovative approaches to using recycled materials and closing material loops, and is highly regarded by industry stakeholders. This interim report identifies an opportunity for similar initiatives to be rolled out by other state and territory governments.

**Place-based initiatives help to enable coordination, address distance challenges and support businesses to develop and share new ideas.** Businesses can use their neighbours' byproducts as material inputs for their own production ('industrial symbiosis') and learn from each other about innovative circular practices or how to efficiently navigate government approval processes. Often there are commercial benefits to using local waste streams as inputs, such as lower transport and other costs, as in WA's Kwinana Industrial Area. Co-location also has broader benefits such as local jobs creation, economic growth, social engagement and community cohesion, as evident at the Cherbourg Materials Recovery Facility on Wakka Wakka Country in Queensland and in Bega Valley in New South Wales.

Productive connections between businesses in these precincts and communities can arise in the course of business as usual, or by chance. But many businesses do not have the time or knowledge to identify circular opportunities with their neighbouring businesses, and innovation can be challenging to grow and scale. This interim report suggests that governments can help reduce barriers to local coordination by integrating circularity into precincts with related objectives (such as net zero), building on existing service delivery and infrastructure (such as recycling and waste management), and reducing regulatory barriers to encourage place-based experimentation and circular activities. Governments contemplating support for place-based initiatives should consider whether businesses already have motivations for co-location and local coordination, and how to design programs to enable local activities to grow sustainably so they do not require ongoing government support.

A particular policy area where **the Australian Government has a significant role in providing national leadership and coordination is product stewardship schemes.** Product stewardship schemes make

businesses responsible for managing the environmental impacts of products and materials over their life cycle, through activities to close, narrow and slow material loops.<sup>3</sup> Making the businesses that create or sell products responsible for these impacts is more likely to lead to meaningful change across the life cycle, as businesses earlier in the supply chain have more direct control over design and production decisions than end consumers. It is challenging for state and territory governments to implement and enforce these schemes, as much of their activities require coordination at a national level, such as sharing information, aligning on best practice standards or involving international supply chains and trade flows.

Product stewardship schemes are typically sector- or product-specific with varying degrees of government involvement, ranging from voluntary industry-led schemes accredited by the government, to co-regulatory and mandatory schemes. Implementing a mandatory scheme has higher setup costs and requires more compliance monitoring and enforcement, and moving too fast to mandatory arrangements can reduce opportunities for businesses to join and 'buy-in' to the scheme. This interim report suggests that there is scope for the Australian Government to more actively coordinate stewardship for products with higher-risk and/or higher-value waste streams, and where arrangements are currently underdeveloped, ineffective or inconsistent across different jurisdictions.

- Electric vehicle (EV) batteries pose significant environmental and safety hazards if not properly disposed of. Growing demand for EVs is expected to significantly increase EV battery waste, and high-value materials could be recovered from this waste. A co-regulatory product stewardship scheme for EV batteries could include government compliance and enforcement activities to support traceability and information sharing, and standards on safe transport, storage and processing methods. Such standards have been developed in the US and Canada, while the EU has introduced digital passports to provide information about EV batteries across their life cycle.
- Solar panels are another emerging waste stream featuring materials that are relatively hazardous in landfill and relatively high value if recovered. Similar to EV batteries, setting up an appropriate co-regulatory product stewardship scheme for solar panels now will provide the foundations for higher resource recovery and lower environmental impact in coming years as volumes of hazardous waste increase. The Australian Government intends to develop such a scheme for small-scale PV systems, though its design and implementation are yet to be finalised. There has been international progress on addressing solar PV system waste and stewardship in the EU, China, Japan and some US states.
- Small electronic products are not included in the existing National Television and Computer Recycling Scheme (NTCRS).<sup>4</sup> Many of these products have embedded lithium-ion batteries, which present significant safety risks upon disposal. Some state governments are separately proceeding on addressing these risks, but a national co-regulatory product stewardship scheme for small electronics would improve consistency and efficiency. The Australian Government intends to develop such a scheme, but its design and implementation are yet to be finalised.
- Plastics and packaging are covered by a co-regulatory product stewardship scheme, but the existing scheme is ineffective. The Australian Government is currently considering potential reforms, including transitioning towards mandatory product stewardship arrangements, which is broadly supported by many

---

<sup>3</sup> These include resource recovery and recycling, improving sustainability in product design and extending product lifespans. Product stewardship schemes can also involve levies paid on new products sold.

<sup>4</sup> The NTCRS is a co-regulatory product stewardship scheme that covers televisions and computers, including printers, computer parts and peripherals. It focuses on recycling e-waste, resulting in some otherwise functional or repairable products being dismantled or destroyed. As such, this interim report reiterates the recommendation from the PC's 2021 Right to Repair inquiry that the NTCRS should include reuse and repair within annual targets.



stakeholders. A detailed understanding of the benefits and costs of a mandatory approach, and the extent to which the benefits outweigh costs, should underpin any shift towards heavier government intervention.

## Addressing information gaps would support decision making

Poor information quality and availability limits the ability of households and businesses to adopt more circular practices, as even if they wish to change behaviours, they may lack the information to make sustainable choices. And limited system-wide data on circular economy progress and impacts means that governments and other stakeholders are less able to make well-informed decisions about circular activities and policies.

From a consumer perspective, **better visibility on product repairability and durability would enable more informed purchase choices** and greater confidence regarding which products are easier to repair or have longer lives. This can shift behaviours towards these products, which slows material loops. For example, France's repairability index (which reports on the ease of repairing various consumer electronics) has led to retailers selling more repairable products in greater proportions than less repairable ones, and manufacturers introducing new product models that are increasingly repairable. This interim report reiterates the recommendation from the PC's 2021 Right to Repair inquiry that the Australian Government should introduce a product labelling scheme that provides consumers with repairability and durability information for appliances and electronics. It also suggests that improving labelling on textiles and clothing products to provide information on design, material composition, repairability and durability could support consumers and businesses to adopt circular practices.

At a system level, **existing indicators measuring Australia's circular economy are highly aggregated and weight based**, and do not specifically reflect the environmental, economic and social outcomes associated with different types of materials use and circular activities. An expanded set of indicators would enable governments and businesses to identify circular opportunities that could lift Australia's materials productivity and have positive environmental, economic and/or social impacts, and to measure the improvements made. This supports national efforts to achieve the targets in Australia's Circular Economy Framework on improving resource recovery, reducing material footprint and lifting materials productivity. It can also inform policy decisions around industry and regional development, and the contribution that circular opportunities could make to economic and productivity growth.

To achieve these aims, this interim report proposes an expanded set of circular economy indicators that could be measured in Australia, relating to the environmental and economic outcomes from circular activities.<sup>5</sup> The proposed indicators are based on outcomes measured in more developed international monitoring frameworks and the level of granularity required for opportunity identification and progress tracking in the Australian context.

These benefits need to be weighed against the costs associated with collecting more data when determining the role for government in circular economy measurement. Data on several indicators is already collected and reported elsewhere (such as the National Waste Report and National Greenhouse Accounts), and some broader environmental data initiatives are also underway (such as the newly established Environment Information Australia and the ABS considering including environmental impacts on the economy in the

---

<sup>5</sup> Proposed indicators relating to environmental outcomes include waste generated by material type and sector, recovery rates by material type and sector, and greenhouse gas emissions from production activities by sector. Those relating to economic outcomes include gross value added of circular economy activities by sector, jobs in circular economy activities by sector, business investment in circular economy activities by sector, and research and development expenditure on circular economy technologies by sector.

System of National Accounts). Where there is existing reporting or activity underway, data may be able to be added to a suite of indicators for monitoring Australia's circular economy at relatively low cost. The feasibility of other indicators could be limited by the potentially large costs associated with attributing outcomes to circular economy activities and disaggregating data by sector.

## **The PC is seeking further information about its proposed reform directions**

Throughout this interim report, the PC has proposed reform directions on which it is seeking further information as an input to developing its final recommendations for this inquiry. The PC is also requesting information about other issues and policy areas that could feature in recommendations in its final report. Requests for information include questions about:

- the current and potential uptake of circular economy opportunities in specific sectors and materials
- the nature and size of the expected benefits of circular opportunities, and how policy reform directions enabling opportunities could be implemented to maximise these benefits
- the costs and implementation options associated with reform directions, including which are achievable over the short to medium term and which levels of government are best placed to progress them.

# Recommendations, reform directions and information requests

In this interim report, the PC has identified circular economy opportunities where policy changes could result in net benefits to the community. 'Recommendations' are relevant policy changes that the PC has included as final recommendations in past inquiries, which governments have not yet fully implemented. 'Reform directions' are potential policy changes that the PC is currently considering. The PC is also seeking further input via 'information requests' as part of developing this inquiry's final recommendations.

## Chapter 4: The built environment



### Reform direction 4.1

#### Enabling fit-for-purpose use of recycled materials in public projects

The PC is considering ways governments can reduce unnecessary regulatory barriers to using fit-for-purpose recycled inputs in public infrastructure projects (such as roads). Options could include modifying or harmonising existing standards and specifications and developing new standards.



### Information request 4.1

#### Enabling fit-for-purpose use of recycled materials in public projects

The PC is seeking information on:

- prescriptive versus performance-based standards:
  - specific examples where prescriptive standards or specifications for infrastructure construction significantly inhibit the use of recycled materials
  - what other benefits or objectives these prescriptive standards are intended to achieve (for example, public safety, or to enable clarity for smaller businesses)
  - ways that various levels of governments could facilitate greater use of performance-based standards
  - challenges, costs and benefits, and implementation issues that need to be considered if moving from prescriptive to performance-based standards (for example, monitoring and enforcement)
- harmonisation of standards:
  - key areas where there is scope to harmonise standards and specifications across states or territories and increase the use of recycled materials
  - specific implications (costs, benefits, risks) of harmonisation (for example, due to lack of flexibility to reflect local conditions), and whether or how they could be overcome.



#### Reform direction 4.2

##### Coordination mechanisms to enhance the benefits of sustainable procurement policies

The PC is exploring the potential for governments to introduce or expand delivery mechanisms around sustainable public procurement policies to facilitate coordination between suppliers, contractors and government agencies. This could include publishing information or connecting suppliers and users of recycled materials, as in Victoria's ecologiQ program.



#### Information request 4.2

##### Coordination mechanisms to enhance the benefits of sustainable procurement policies

The PC is seeking information on:

- the benefits and costs associated with introducing or expanding government-led coordination initiatives to support public procurement policies in different jurisdictions
- how further government efforts to facilitate coordination between suppliers, contractors and government agencies could be implemented to maximise net benefits to the community
- specific ways that coordination could assist suppliers of recycled materials to navigate sustainable procurement policy requirements and help government procurement agencies and suppliers identify win-win opportunities.



#### Reform direction 4.3

##### Reducing unnecessary regulatory barriers to prefabricated construction

The PC is considering a reform direction to further address regulatory barriers to prefabricated construction (noting that governments are currently implementing several initiatives to address these barriers). This may relate to:

- addressing planning requirements and design codes that stymie prefabricated construction
- establishing fit-for-purpose compliance pathways in the national compliance framework
- establishing new processes and schemes for national building product conformity.



### Information request 4.3

#### Reducing unnecessary regulatory barriers to prefabricated construction

The PC is seeking further information on the regulatory barriers to prefabricated construction, including:

- the extent to which recently announced measures by the Australian Government (the Australian Productivity Fund and the Voluntary Certification Scheme) will address key barriers to prefabricated and modular construction
  - how these initiatives could be implemented to maximise the net benefits to the community
- specific regulatory changes (including recommendations from previous reviews that remain relevant) that would have the largest effect on uptake of prefabricated and modular construction, and:
  - the magnitude of the environmental, economic and social benefits associated with these changes, and measures and metrics that may quantify this
  - costs associated with the changes, including resources required for implementation, compliance and enforcement, and potential impacts on the environment associated with different regulations
  - how regulatory changes could be implemented to maximise the net benefits to the community.



### Information request 4.4

#### Other circular economy opportunities in the built environment

The PC is seeking the following information on government assessment of public infrastructure projects, and integrated planning:

- any examples of infrastructure investment decisions proceeding without adequate integrated planning or assessment, which have led to significant unnecessary materials use and waste that may otherwise have been avoided
- the extent to which and ways in which improving assessment of public infrastructure projects could reduce materials use and waste, including quantitative analysis of costs and benefits (where available)
- barriers preventing further adoption of integrated urban planning, which governments could address.

The PC is seeking the following information on designing for disassembly in the built environment:

- expected growth in design for disassembly for different types of structures in Australia, in the absence of any further government activity
- barriers preventing further adoption of design for disassembly in Australia, which governments could address.

## Chapter 5: Food and agriculture



### Reform direction 5.1

#### Reducing food waste through food relief and donation to charity

The PC is considering how governments could facilitate greater donation of edible foods to the food relief sector. Supporting measures could include governments assisting food donors and charities to deal with transport and storage constraints, which currently prevent the diversion of edible food from disposal to food relief organisations.



### Information request 5.1

#### Reducing food waste through food relief and donation to charity

The PC is interested in further information on the following matters:

- specific regions or stages of food donation (collection, storage, distribution) where barriers and challenges arise
- the most significant kind of barriers faced by the food relief sector, including (but not limited to) coordination issues and infrastructure capacity constraints, and how these might be overcome
- ways, and quantitative assessments of the costs and benefits (where available), governments can make food collection and distribution easier for small and/or geographically dispersed food businesses and charities, including incentivising the use of private storage and transport infrastructure
- examples of governments successfully playing a coordination role between food donors and food relief organisations in Australia or other countries.



### Reform direction 5.2

#### Recognising the benefits of biogas in carbon reporting

The PC is considering how the emissions reduction benefits of anaerobic digestion projects that produce biogas from organic waste could be better accounted for, reported and valued. Options include developing certifications and/or other ways of accurately reporting biogas energy use, similar to those applicable to users of liquid biofuels under the National Greenhouse and Energy Reporting (NGER) legislation.

**Information request 5.2****Recognising the benefits of biogas in carbon reporting**

The PC is seeking further information (including data, where available) on the following matters:

- the extent to which modified carbon reporting methodologies for biogas use, similar to those for liquid biofuels use under NGER legislation, could materially increase uptake of anaerobic digestion projects in Australia
- the extent to which a nationally recognised certificate for biogas is necessary to accurately value the environmental benefits of using biogas drawn from shared infrastructure
- the benefits, costs and risks associated with adopting certifications or modified reporting methodologies for biogas.

**Information request 5.3****Reforming regulations to support the recovery of value from organic waste**

The PC is seeking further information on regulatory barriers to projects that recover value from organic waste. Specifically, the PC is interested in further information on the following matters:

- specific regulations or regulatory inconsistencies that create disincentives to invest in projects that recover the value of organic waste (and estimates of associated compliance costs, where available)
- examples of projects not proceeding because of restrictive regulations or regulatory inconsistencies
- opportunities for reducing these barriers without compromising objectives such as protecting human health, the natural environment or local amenity (e.g. odour), including examples of best practice.

## Chapter 6: Textiles and clothing

**Information request 6.1****Protections for consumers of textiles and clothing**

The PC is seeking the following information on protections for consumers of textiles and clothing:

- the extent to which consumers of textiles and clothing products consider certification trademarks when choosing between different products and what product qualities those certifications cover (for example, ethical production, sustainable inputs, product functionality)
  - which certification trademarks are considered most trusted in the textiles industry and by consumers, and what makes them stand out compared to others
- the extent to which textiles and clothing manufacturers and retailers engage in misleading behaviours (for example, misleading logos, terminology, or accreditation; providing insufficient information to support claims) that fall outside of existing general consumer protection laws (such as the Unfair Trading Practices prohibition) and associated compliance activities (guidelines)



### **Information request 6.1** **Protections for consumers of textiles and clothing**

- what, if any, harms to consumers arise from these misleading claims
- actions that governments or product stewardship schemes could take to promote the availability of reliable and relevant information about whether clothing and textiles products' claims related to circularity and sustainability are accurate and credible.



### **Reform direction 6.1** **Product labelling for textiles and clothing**

The PC is considering the role for governments in product labelling to improve the availability of information about textiles and clothing products (such as their design, material composition, reparability and durability) and enable consumers and businesses to adopt circular practices. Options could include amending existing regulatory frameworks or standards governing existing textile and clothing labelling schemes, and/or designing and developing a new product labelling scheme with industry.



### **Information request 6.2** **Product labelling for textiles and clothing**

The PC is seeking the following information on product labelling for textiles and clothing:

- the types of information on product qualities (such as sustainable inputs, reparability, durability and recyclability) that would be usefully included on product labels for:
  - consumers, to support their ability to buy circular textiles and clothing products
  - textiles recycling and upcycling businesses, to support their ability to adopt circular opportunities
- what would be required for businesses and retailers in Australia to access accurate and consistent information for product label details
- the extent a product labelling scheme could build on existing information systems, standards and regulations or would require new ones to be set up, and associated costs and implementation issues
- whether other forms of labelling or information (business to business, or end of system) could facilitate greater circularity across the textiles product life cycle.





### Information request 6.3 Textiles and clothing product stewardship schemes

The PC is seeking further information on:

- the impacts of changing from a voluntary industry-led scheme to a voluntary accredited, co-regulatory or mandatory scheme, such as:
  - the value of potential environmental, economic and/or social benefits from greater government involvement in textiles and clothing product stewardship schemes
  - the size and nature of potential costs associated with this increase in government involvement
- reasons for businesses and retailers to join or not join the Seamless and ABSC schemes, and what additional incentives or changes would encourage greater participation
- businesses' and retailers' experiences of participating in textiles and clothing product stewardship schemes, including challenges faced and benefits gained
- limitations in current government accreditation arrangements and how they can be improved to implement effective voluntary schemes.

## Chapter 7: Mining



### Reform direction 7.1 Reducing regulatory barriers to circular economy opportunities for mining waste and alternative post-mining land uses

The PC is considering whether there is scope to reduce regulatory barriers related to circular economy opportunities in mining waste and repurposing land post-mining. An assessment of these barriers across state, territory and Australian government policies could consider:

- processes and permissions required to re-mine or re-purpose mining tailings
- regulations and practices that make it difficult for multiple operators to co-exist on a mine site
- restrictions on transporting mining waste
- regulation and practices that maximise net environmental, economic and social benefits from mine transitions, including repurposing infrastructure associated with mine sites
- regulations limiting the ability of new operators to take on mine sites for alternative higher-value uses, such as liabilities for legacy environmental impacts.



### Information request 7.1

#### Reducing regulatory barriers to circular economy opportunities for mining waste and alternative post-mining land uses

The PC is seeking further information on:

- specific examples of regulations that have impeded circular economy opportunities for mining waste or alternative uses for closed mine sites, and the expected benefits, costs and risks of reducing regulatory barriers (including quantitative analysis, where available)
- potential solutions to regulatory barriers, such as new regulatory frameworks or legislative changes
- specific areas of investigation or questions for an assessment of regulatory barriers related to mining waste materials recovery and repurposing closed mine sites
- the extent to which addressing regulatory barriers would increase the uptake of circular economy opportunities for mining waste and alternative post-mining land uses (including quantitative estimates, if available), or if other barriers would still prevent meaningful uptake.



### Information request 7.2

#### Ways governments could facilitate circular economy opportunities for mining waste and alternative post-mining land uses

The PC is seeking further information on:

- ways that governments could better facilitate circular economy opportunities for mining waste and alternative post-mining land uses, such as improvements to regional planning and development, applying stricter standards on the production and storage of mining waste, or introducing disincentives for producing mining waste, such as mining waste levies
- the benefits, costs and risks associated with these options (including quantitative analysis, where available).

## Chapter 8: Vehicles



### Recommendation 8.1

#### Evaluating the Motor Vehicle Service and Repair Information Sharing Scheme

The PC recommends the Australian Government's evaluation of the Motor Vehicle Service and Repair Information Sharing Scheme in 2025-26 assess the following:

- the costs and benefits for various stakeholders and whether the scheme is delivering net benefits
- whether the scheme is achieving its objectives to improve competition and choice in the market and how the scheme could be potentially improved
- the costs and benefits for various stakeholders if the scheme were to be expanded to include a greater scope of products (such as agricultural machinery) or to provide fair access to more repair market participants (such as spare parts suppliers and marketplaces).

**Information request 8.1****Targeted measures to improve the collection and recovery of off-the-road tyres**

The PC is seeking input on appropriate policy actions to improve collection and recovery rates of off-the-road (OTR) tyres, and the extent to which policies could lead to net benefits to the community.

- What are the environmental, economic and social impacts of unrecovered OTR tyres? What are the size of these impacts (including any data, if possible)?
- Which policy actions would be most effective in improving collection and recovery rates? What are the benefits to the community associated with these policies (including any data, if possible)?
- What are the costs and benefits of implementing and enforcing these policies (including quantitative analysis, where available)?
- What are the roles for different levels of government in implementing these measures?
- What are the ways in which governments can partner with Aboriginal and Torres Strait Islander communities on collection and recovery opportunities?
- What are the current levels of demand for products that can be produced from OTR tyres (including any data, if possible)? Are there any technical or regulatory barriers inhibiting their production or use?

**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.



### Information request 8.2

#### Establish the foundations of a robust end-of-life electric vehicle battery industry

The PC is seeking further information about government measures that could appropriately facilitate support for and overcome barriers to the development of a robust end-of-life electric vehicle (EV) battery industry. Measures could address supply of end-of-life EV batteries, or demand for second-life batteries and battery products. The following questions can help inform responses:

- Are there technological or regulatory barriers inhibiting reuse, repurpose and recycle activities?
- What are current levels of market demand for second-life EV battery products in Australia (including any supporting data)? Are there barriers to connecting supply of these products with demand?
- What costs would the measures place on businesses and consumers, and (for regulation) on government implementation and enforcement (including quantitative analysis, where available)?
- What activities could be undertaken by state, territory and local governments to support any overarching scheme implemented by the Australian Government?
- What additional measures are needed to address environmental and safety concerns related to EV battery handling and processing?
- What are the costs and benefits (including estimates, where possible) of developing further processing capability of black mass in Australia?

## Chapter 9: Household, consumer and emerging electronics



### Recommendation 9.1

#### Introduce a product labelling scheme for household appliances and consumer electronics

To better inform consumer purchasing decisions, the Australian Government should develop a product labelling scheme that provides consumer information about durability and repairability for household appliances and consumer electronics, as recommended in the PC's Right to Repair inquiry (2021).



### 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.



### **Information request 9.1** **Barriers to greater reuse and repair**

The PC is seeking further information on barriers to greater reuse and repair in the electronics sector and how widespread the issues are, including:

- whether there is unmet demand (including any data, if possible) for reuse and repair services, and if so, which electronic products and consumers are most affected
- what might be preventing the supply of these services
- what governments' role might be to address any barriers to these services, including relating to:
  - skills and accreditation for the repair of electronic products
  - coordination of and information provision about access to electronic repair services, including where this may assist recipients of social benefits and services.



### **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.



### Information request 9.2

#### Product stewardship for small electronics, including embedded lithium-ion batteries

The PC is seeking further information on:

- what barriers (such as public awareness or infrastructure) currently limit the collection and recycling of different types of small electronics, and how these barriers differ by product
- how including different types of small electronics in a product stewardship scheme would result in environmental, economic and/or social benefits and costs (including estimates, where possible)
- the costs and benefits of expanding existing product stewardship schemes – such as the co-regulatory NTCRS or the voluntary B-cycle scheme – to include (other) small electronics, rather than establishing an entirely new scheme
- whether and how a staged approach (e.g. by product or location) could be a cost-effective way to sequence the addition of small electronics into a product stewardship scheme, whether new or existing
  - if staged by product, which products should be addressed first and why
- what the costs and benefits would be (including estimates, where possible) of introducing a minimum threshold for the value of small electronics to be included in a product stewardship scheme
- what compliance and enforcement arrangements would be necessary under a co-regulatory scheme to encourage adoption and address 'free rider' behaviour
- how else the scheme could support circularity earlier in a small electronic product's life cycle, including sustainable design and reuse and repair activities.



### Reform direction 9.4

#### Product stewardship for small-scale PV systems

The PC supports the Australian Government's intention to establish a co-regulatory product stewardship scheme for small-scale PV systems, including legacy waste, and is seeking further information on how the scheme could be designed and implemented to support materials productivity and economic outcomes.



### Information request 9.3 Product stewardship for small-scale PV systems

The PC is seeking further information on:

- whether large-format or energy storage batteries should be included or excluded in the scheme (including estimates of the costs and benefits, if possible)
- whether compensation should be provided for PV systems returned in good condition (including any estimate for this compensation and cost-benefit considerations)
- how best to establish a system of collection points for PV waste, including local government involvement, especially in regional and remote areas, and whether existing collection points such as those under the NTCRS could be leveraged
- which specific industries or markets in Australia, if any, could benefit from the recovered materials of PV waste (including the size of these benefits, if possible)
- how else the scheme could support circularity earlier in the solar PV system life cycle, including sustainable design and reuse and repair activities.

## Chapter 10: System-wide arrangements



### Reform direction 10.1 Governance arrangements to harmonise regulations that pose barriers to circularity

The PC is proposing that the Australian Government facilitates coordination between state and territory governments to harmonise inconsistent regulations across jurisdictions. The PC is considering how existing coordination mechanisms in Environment portfolios can be made more effective, what the role for the Australian Government should be in driving change (such as chairing, providing secretariat and/or resourcing, setting the agenda, leading the development of an intergovernmental agreement), and whether a new interjurisdictional body dedicated to circular economy harmonisation efforts is both practical and warranted.

Coordination would enable governments to agree on what settings regulations should be harmonised to, and how. A preliminary set of state and territory regulations for consideration might include:

- waste classifications (building on the strategic direction outlined by the Heads of EPA Australia and New Zealand)
- specifications for using recycled materials in infrastructure projects (chapter 4)
- lithium-ion battery waste management regulations (chapter 9).

Intergovernmental coordination would also support the identification of other harmonisation opportunities. These may include specific inconsistencies in planning, zoning and health regulations that relate to environmental impacts and are presenting barriers to circular economy growth.



### Information request 10.1

#### Governance arrangements to harmonise regulations that pose barriers to circularity

The PC is interested in further information on the following questions:

- How could existing intergovernmental coordination mechanisms in Environment portfolios – such as the Environment Ministers' Meetings, Heads of EPA forums and/or officer level communities of practice – be improved to more effectively and quickly harmonise inconsistent regulations that are limiting uptake of circular opportunities? What would be the costs of these changes?
- What would be the benefits of setting up a new institutional body to oversee harmonisation efforts? How would such a body need to be structured to improve on current arrangements, and what would be the costs of setting up and running it?
- Apart from those identified in reform direction 10.1, what other inconsistent regulations (such as planning, zoning and health regulations) are presenting barriers to circular opportunities? How well do existing intergovernmental coordination mechanisms in other portfolios take into account the impact of these regulations on circular opportunities?



### Reform direction 10.2

#### Supporting coordination, facilitation or brokering services

The PC is considering a reform direction on government support for services to assist businesses in finding circular opportunities and partners, and navigating the complex regulatory environment. This could include through governments facilitating access to coordination services through trials or raising awareness of relevant initiatives. Governments may, in some cases, choose to collaborate or partner with businesses and other stakeholders on circular opportunities.

Special arrangements may be required to assist businesses and other organisations to find partners for circular projects in regional and remote areas, and for small and medium businesses.



**Information request 10.2****Supporting coordination, facilitation or brokering services**

The PC is interested in further information on **supporting businesses and communities to identify circular opportunities and develop partnerships**:

- What government initiatives could most effectively support businesses' coordination?
  - How could governments use or build on existing platforms for information sharing or collaboration?
  - Are there examples of governments partnering with intermediaries, such as industry associations or other network bodies, to support collaboration? How might this be further strengthened?
  - What would be the benefits and costs associated with these initiatives, in terms of economic, environmental and/or social outcomes?
  - What lessons could be learned from successful government initiatives supporting facilitation or coordination in other industries?
- Are there special considerations for how governments might support businesses to identify partners in regional and remote Australia?
- How could governments support Aboriginal and Torres Strait Islander businesses and communities to identify opportunities and partnerships? What current or new initiatives could be adopted or extended?
- How do the needs of small and medium businesses or organisations differ from larger businesses or organisations in relation to adopting circular practices, and how might governments best support this cohort?

The PC is interested in further information on **navigating regulatory complexity**:

- What are the barriers to knowledge (or transition) brokers, project officers, community development officers and the like effectively assisting organisations to navigate regulatory complexity?
- To what extent is there a need for government to provide services, given that there are already private consultant services that can support businesses to navigate regulations?
- What kind of regulations do businesses most need help navigating to pursue circular opportunities? Are these at Commonwealth, state and territory, or local government level?

**Reform direction 10.3****Supporting greater adoption and diffusion of circular innovations**

The PC is considering a reform direction on government support for businesses to adopt and diffuse innovative circular practices and technologies. This could involve working with intermediaries that have existing connections between industry, government, researchers and markets, such as industry associations and other network bodies. The PC is considering:

- challenge-based funding models to encourage innovation across supply chains
- how governments can connect researchers and industry to commercialise innovative research.



### Information request 10.3

#### Supporting greater adoption and diffusion of circular innovations

The PC is interested in further information on **challenge-based funding for innovation**:

- Are there examples of circular economy innovations that have been successfully funded through challenges (in Australia or internationally) and what determined their success?
- What might be the benefits and limitations to this approach? What are the likely costs?

The PC is interested in further information on **connecting industry and research**:

- What are useful models for how government can connect industry and researchers? When is this best done at the industry level, and when by location (such as a region or local government area)?
- Are there examples of successfully adopting or diffusing circular innovations across supply chains?
- What are additional examples of Australian, state, territory and local governments successfully fostering these connections?

The PC is interested in further information on **Aboriginal and Torres Strait Islander knowledges** and circular innovations:

- What actions could governments take to value Aboriginal and Torres Strait Islander knowledges, in ways that protect Indigenous cultural and intellectual property, in the adoption and diffusion of circular innovations?



### Information request 10.4

#### Improving investor confidence in the circular economy

The PC is interested in further information on the following questions:

- Will the proposed Australian sustainable finance taxonomy and enhanced ESG reporting provide sufficient information for investors to make informed decisions about circular economy projects? Or are further initiatives, required to improve investor confidence in the circular economy?
- What are examples of sectors or circular activities being impacted by the cost and availability of insurance? What factors or risks currently determine insurance availability (or lack thereof)?



### Reform direction 10.4

#### Government support for place-based circular initiatives

The PC is considering how governments at all levels could consider whether there are opportunities to enable place-based circular initiatives within their jurisdictions. As a first step, governments could consider:

- how existing precincts with related objectives (such as net zero) might integrate greater circularity
- setting up or expanding materials recovery facilities as a basis for place-based circular activities
- whether there are opportunities to reduce regulatory barriers to place-based circular activities (such as expediting approvals or planning processes).



### Information request 10.5

#### Government support for place-based circular initiatives

The PC is interested in further information on the following questions:

- To what extent are existing precincts (such as those set up for net zero, advanced manufacturing, or Special Activation Precincts) already engaged in circular activities? What are some of the ways to encourage further circular activities in these precincts?
- What are the barriers (and possible solutions) to expanding or setting up materials recovery facilities? How might facilities provide a basis for place-based circular opportunities? Are there examples of this?
- What service provision and funding models would best support place-based circular activities, including reuse, repair, waste collection and recycling activities in remote and very remote areas?
- What are the main regulatory barriers that communities or businesses face in establishing place-based circular initiatives?
- What other kinds of government assistance or support do communities or businesses need to enable successful place-based circular precincts (such as coordination or facilitation, as in information request 10.2)?
- What actions could governments take to facilitate Aboriginal and Torres Strait Islander roles in progressing place-based circular initiatives?
- What actions could governments take to value Aboriginal and Torres Strait Islander knowledges, in ways that protect Indigenous cultural and intellectual property, to identify and develop place-based circular opportunities?



### Reform direction 10.5

#### Expanding the set of circular economy indicators

The PC is considering a reform direction that proposes an expanded set of indicators to monitor Australia's circular economy progress. The outcomes captured in the proposed set are based on indicators used in more developed international monitoring frameworks. Outcomes would need to be tracked at reasonably granular level in order for the data to be used by governments and businesses to identify and track progress on circular opportunities. The proposed indicators include:

- Indicators relating to environmental outcomes from circular activities:
  - Waste generated by material type and sector
  - Recovery rates by material type and sector
  - Greenhouse gas emissions from production activities by sector
- Indicators relating to economic outcomes from circular activities:
  - Gross value added of circular economy activities by sector
  - Jobs in circular economy activities by sector
  - Business investment in circular economy activities by sector
  - Research and development expenditure on circular economy technologies by sector

Data on some indicators is already being collected and reported elsewhere. The PC notes that the feasibility of monitoring some of these indicators could be limited by the potentially large costs associated with attributing outcomes to circular economy activities, and disaggregating data by sector.



**Information request 10.6**  
**Expanding the set of circular economy indicators**

The PC is interested in further information on the following questions:

- What are specific examples of how governments (at all levels) and businesses would use the proposed circular economy indicators to identify and track progress of circular opportunities?
- What would be the costs associated with gathering data on the proposed circular economy indicators?
- Which agencies would collect or estimate the data?
- How consistent across states and territories is the data needed for circular economy indicators? Does it allow comparison across industries or sectors?
- Are there alternative indicators that would better measure the progress of Australia's circular economy? What would be the benefits and costs associated with these alternatives?
- What reporting format would be most valuable and accessible to stakeholders using the monitoring data (e.g. including in the Measuring What Matters framework, or a separate dedicated dashboard)?
- Over what timeframe could the proposed expanded set of indicators be rolled out? How frequently should the set of indicators be reviewed and updated, so that they can remain fit for purpose to inform government and business decisions about the circular economy?