Tasmanian Government Submission

Productivity Commission inquiry into Australia's opportunities in the circular economy

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Department of Premier and Cabinet

Tasmanian Government

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Introduction

The Tasmanian Government welcomes the Productivity Commission inquiry into Australia's opportunities in the circular economy.

We acknowledge and respect Tasmanian Aboriginal people, who have long practiced sustainable living by using the resources the natural environment provides in a way that ensures their availability for future generations.

The circular economy aims to create a regenerative system where resources are reused, recycled, and repurposed, reducing the need for new raw materials, and minimising environmental impact.

Both approaches recognise the importance of maintaining balance with nature, ensuring that economic activities do not deplete or harm the environment but rather contribute to its ongoing health and vitality.

Tasmania’s small size and geographic separation from mainland Australia has necessitated resourcefulness and self-sufficiency. Renowned for our pristine environment and commitment to sustainability, Tasmania is uniquely positioned to lead in the transition towards a circular economy.

Existing and planned Tasmanian Government initiatives for the transition include:

- The Tasmanian Waste and Resource Recovery Strategy 2023-2026, which has a vision of Tasmania being a place where nothing is wasted.
- Establishment of the Waste and Resource Recovery Board in 2022, which provides governance of the strategy and administration of landfill levy funds.
- The 2023 Bioenergy Vision for Tasmania, to embed bioenergy as a valued renewable resource for the Tasmanian economy, community, and environment, as an aid to energy production, waste management, and resource recovery, and reduction of greenhouse gas emissions.
- The Competitiveness of Tasmanian Agriculture for 2050 White Paper, 2020, which is part of Tasmania’s AgriVision 2050 strategy to increase the annual farm gate value of agriculture to $10 billion by 2050. The White Paper identifies circular economy and value-adding through closing agri-food resource loops for profit and sustainability, towards zero waste, as an emerging priority.
- Working with industry and investors to identify and progress new opportunities in the circular economy through the Office of the Coordinator-General.
- Developing a whole-state sustainability vision and strategy for Tasmania.
- Developing an Emissions Reduction and Resilience Plan for Tasmania’s waste sector.

Information requests

Circular economy is a broad concept and has application in every sector, including for households, communities, small business, agriculture, major industry, and all levels of government. Every person and organisation can make choices about responsible consumption and production. The principal opportunity for Australia's circular economy transition is raising awareness of circular economy principles and benefits, and making solutions accessible in all sectors to enable everyone to benefit from the circular economy transition.

The following section provides brief responses to the information requests in the call for submissions. The Tasmanian Government welcomes further engagement on these matters through the course of the Commission's inquiry.

1. Circular economy success stories and measures of success

Tasmania has several examples of circular economy innovation and achievements, ranging from community-led initiatives to major industrial collaborative partnerships.

Community-based organisations including Sustainable Living Tasmania, Circular Economy Huon, several repair cafes around the state, and many more, help households and small businesses to reduce waste and prolong product and material use, as well as generally raising awareness of the benefits of circular economy and sustainable living.

Some bioenergy case studies from Tasmania are available on the Renewables, Climate and Future Industries Tasmania website.

For example, Cascade Brewery in Hobart has displaced natural gas with biogas generated through the installation of an anaerobic digester. Around 70,000 cubic metres of biogas is produced annually and burned in a modified natural gas boiler, to provide steam used throughout the brewing process. This reduces greenhouse gas emissions from the brewery by approximately 50 tonnes of carbon dioxide equivalents and reduces energy costs by approximately $20,000 each year. The brewery also saves on substantial trade waste charges avoided by treating the organic wastes onsite.

The anaerobic digestor has generated an additional full-time role managing the anaerobic digestor, as well as secondary employment with truck drivers and service providers. The plant is monitored 24/7 to ensure it complies with very strict parameters for its operation. Brewery waste streams are released from holding tanks

at the most optimal time to maximise the usage of biogas. This world-class facility is an integral part of Cascade's drive for environmental sustainability.

The state-of-the-art Callington Mill Distillery in Oatlands was designed locally to be a highly energy efficient producer of world-class whisky. The Tasmanian technology uses electric boilers and reclaims heat from one process to the next within a closed-loop system. Solid waste is given to local farmers for stock and organic fertiliser, while recycled water is used for enriching and irrigating local soils.

Constructed in 2019, Huon Aquaculture's land-based salmon hatchery at Whale Point is a Recirculating Aquaculture System (RAS) with full-flow ozone treatment and zero discharge wastewater treatment system, where removed biosolids are used as fertiliser on nearby farms and orchards. 97 per cent of water is recirculated back through the system, with most of the remainder reused for salmon bathing in wellboats. The system allows fish to grow larger while on land, reducing the time spent at sea.

Forico Pty Ltd, forestry company and the largest private land manager in Tasmania, began collaborating with leading eFuels company, HIF Global, in 2023 to support the development of Australia's first eFuels production facility in Tasmania, utilising biomass residues from forestry harvesting operations as feedstock.

The Tasmanian Government will be happy to provide further examples through the inquiry and in response to the Commission's interim report. Many initiatives are in planning and development stages, including a circular economy precinct, circular economy symbiosis, and ecommerce material market and materials mapping projects.

Options for monitoring and measuring progress in the development of the circular economy are being considered as part of the Tasmanian Waste and Resource Recovery Strategy and the Tasmanian Sustainability Strategy (currently being developed), with sector-specific monitoring through relevant industry strategies, and voluntary monitoring. Where possible, nationally consistent data on materials productivity and efficiency should be adopted.

The national approach to harmonising waste data classification has assisted Tasmania significantly in its development of tracking waste data as part of the recently introduced landfill levy. The collection against the nationally consistent framework has been welcomed by industry and is leading to the ability to monitor and track trends through time. This is valuable not just for the public to see trends (data reporting is available on the Department of Natural Resources and Environment Tasmania website) but also supports industry investment by providing a better understanding of stocks and flows within the economy.

An important driver in the Tasmanian Waste and Resource Recovery Strategy is the waste hierarchy and moving the recovery of resources further up the chain towards waste avoidance. To support this, understanding the material flows through the economy is essential.

The Tasmanian Waste and Resource Recovery Board is also investing in obtaining evidence of the changes in waste and resource recovery behaviours across Tasmania through various grant and co-investment schemes. The Board is also directly supporting analysis in parts of the economy that are not well understood. For example, a project has recently been initiated in partnership with Charitable Reuse Australia to use nationally consistent methodology to assess the flow and magnitude of the reuse and repair sector across Tasmania. This analysis will then be used by the Board and other policy makers to target strategic investments in that sector.

2. Priority opportunities to progress the circular economy

Reducing environmental harm from plastics pollution remains one of the biggest circular economy opportunities. Tasmania is in the process of introducing the Recycle Rewards container refund scheme and phasing out problematic single-use plastics. Coles Bay on the east coast of Tasmania became the first place in Australia to be plastic-bag free, in 2003. Plastic shopping bags were subsequently banned state-wide through legislation in 2013.

However, there are still significant challenges in addressing the harm from the use of plastic products and waste being disposed to landfill and the broader environment. Continued stockpiling and the collapse of the REDcycle soft plastics recycling program illustrate this challenge. Achieving sufficient scale efficiency in processing and enabling alternative packaging solutions are part of the challenge.

One avenue for investment to overcome these challenges is in the bioeconomy, where waste from sectors including forestry, agriculture, aquaculture, and water and sewerage, for example, can provide valuable biomass inputs to products such as biofuel alternatives to fossil fuels (e-fuels, biodiesel, and sustainable aviation fuel), chemical fertiliser alternatives for agriculture, bioplastics, mineral extraction for product manufacturing, and other purposes. The Tasmanian Government is also currently supporting industry investments in the significant improvement of composting organic wastes, especially for on-farm soil improvement.

Exploring opportunities for innovation in the bioeconomy also helps to address the environmental and greenhouse gas implications of forestry residue burning, wastewater treatment, biowaste from agriculture and aquaculture, and organic waste in landfill.

Improved resource recovery and the transition to a circular economy are crucial opportunities for emissions reduction in Tasmania. The Tasmanian Government is soon to release an Emissions Reduction and Resilience Plan for the waste sector (a consultation draft was released in 2023). The plan will outline priority areas, actions and future opportunities for Tasmania to reduce emissions and build resilience to climate change in the transition to a circular economy.

Another priority opportunity with significant potential benefits for the Commission to consider as part of the inquiry is circularity in textiles, including circular design, product stewardship, and resource recovery from the substantial volume of textiles currently being disposed to landfill.

The Tasmanian Government has invested in developing collaborative partnerships and policy learning opportunities internationally, through the Office of the Coordinator-General.

Countries that have embarked on a circular economy pathway strategy, such as Finland, or have initiated a detailed preparatory analysis in support of a circular economy initiative, such as Germany, have proposed a series of policy recommendations in response to barriers and opportunities:

- Industry needs to lead and invest in innovation with new circular economy-oriented service business models and related innovations in products, processes, and organisational forms. For example, collaborative business models in dedicated industrial hubs to enable the matching of a waste product from one industrial process to an input material of another - ‘your waste is my value’.
- Governments should move towards an economic market framework with true-cost pricing and provide targeted support for advanced circular economy practices – economic incentives – rather than disincentives through subsidies to extractive models.
- Ensure regulatory frameworks are fit-for-purpose and remove barriers.
- Support the development and harmonisation of product and material-level standards – for example, establish a national standard for classifying the condition of used, refurbished, and remanufactured goods and components. Harmonise and diffuse quality standards and labels for high-quality post-consumer recycled materials (recycled content in products).
- Strengthen consumer knowledge and information – right to repair, and access of parts – through demonstration and pilot projects. Consider circular economy curriculum design for schools and national/state circular economy innovation pitch events to elevate the exposure and understanding of circular economy services and products.

- Support public institutions/agencies to lead by example through government procurement by testing circular economy standards/criteria in the tender process, and assessing market appetite and capability in the provision of circular economy products and services.
- Institutionalise the transition to a circular economy in the long-term, by establishing a single agency/authority to develop, coordinate and implement the circular economy policy ecosystem.

Chile, faced with an acute waste and pollution crisis, has developed a circular economy roadmap for 2040, with specific, measurable targets and actions across four pillars – circular innovation, circular culture, circular regulation, and circular territories (regions).

France has taken stronger regulatory approach with the introduction of its anti-waste and circular economy laws in 2022. This suite of laws focuses on addressing waste at the source, with measures including placing responsibility for reusing or recycling unsold non-food products on the manufacturer, mandatory product repairability, product labelling, and requiring companies to provide consumers and repairers with product technical information and spare parts.

3. Hurdles and barriers to a circular economy

The adoption of circular economy principles – the 9Rs referenced in the call for submissions – is challenging, not well-understood and requires significant rethinking to flip the prevailing linear economic approach of ‘take, make and waste’.

The imperatives driving this design rethink include global resource depletion, biodiversity loss, and climate change.

These imperatives are real and are increasingly compelling but significantly, as countries strive to develop circular economy transition pathways, each step forward gives rise to ‘learning by doing’ obstacles, highlighting the depth and range of barriers to policy development and implementation. Some of these barriers are broadly summarised below.

- **Regulatory barriers** –impact on activity in the circular economy sectors, particularly those dealing with ‘waste’ where legislation requires ‘waste’ to be managed in a way that restricts reuse and value-adding opportunities. ‘Waste’ prescriptions/principles need to be replaced with ‘Resource Recovery’ to send a message of intent around circular economy transformative pathways. This is particularly relevant to broadly applicable procurement/tender processes and criteria that without change, remain an impediment to transition and anchor these processes in linear economic paradigms.

- **Financial barriers** – as emerging and immature sectors, circular economy products and services face significant challenges in funding and revenue models.
- **Organisational barriers** – circular economy business models are either well-established, like recycling, or emerging, often as start-ups, particularly in the value-adding to circular economy biomaterial sector. Implementation of circular economy business models can be challenging. Scaling up and adoption of innovative technology often require pilots and demonstration projects prior to commercialisation.
- **Consumption-related barriers** – reduced consumption of virgin resources is a circular economy objective, but the cost of new innovative products and services is often prohibitive, or there is a market perception that recycled, remanufactured, reusable services and products are inferior in terms of quality and branding.
- **Value chain barriers** – creating and maintaining value-chains in new circular economy business models alongside competing existing linear supply chains hinders initial value-chain development. Convenience is one of the values that start-up circular economy products and services emphasise to attract customers. Convenience to access, purchase, and reuse or recycle a product or a service is an essential brand and marketing point of leverage for emerging circular economy value chains.
- **Technical barriers** – circular business models that relate to the life cycle of materials and products (research and development, design, production, take back/reuse and remanufacture) can face significant technical barriers, long development timelines and expensive capital and operating costs.

While the call for submissions states that the inquiry will consider circular economy through the lens of materials productivity and efficiency, a priority focus should include how the circular economy can address as many of society's challenges simultaneously, or address as many of governments' policies simultaneously, as possible. The value of the circular economy extends further in the social, economic, and environmental system beyond materials productivity, including waste reduction, decarbonisation, renewable energy, resource and supply chain security, new market opportunities, economic development, and generating local employment.

Not only will this approach solve many issues, but in many cases the circular economy or bioeconomy will only be attractive financially when multiple values and returns from more than one value are considered. This requires systems thinking and systems approaches, which is one of the greatest challenges to the circular economy. Whole systems need to be considered, not just parts of the system, like 'waste management' in isolation of the social and economic drivers of waste creation. It is

easier and often more economic to have a linear model when considering just one value or problem, which is the default fallback when decision makers are faced with systems complexity.

To enable this more complex thinking to emerge for companies and communities, it may be useful to support pre-feasibility studies that target the board level decision makers in companies and/or government, or groups of companies, or even precincts to demonstrate to decision makers that a circular economy option can be found and is worthy of support. This is the approach of the Australian Government's Urban Precincts and Partnerships Program Stream One: Precinct Development and planning. A pre-feasibility approach like this would support the systems thinking needed to identify the multiple value propositions in a circular economy initiative needed to demonstrate a positive return on investment and/or public value.

4. Government's role in the circular economy

Governments implement circular economies by encouraging waste reduction, recycling, resource recovery, alternatives to plastics, adoption of renewable fuels, and renewable energy.

Further to the initiatives mentioned in the introduction, strategy and actions supporting the transition to a circular economy, low emissions economy, and social, economic, and environmental sustainability are increasingly featuring in Tasmanian Government policies and programs across all agencies and sectors of the economy. In particular, the Tasmanian Government is committed to the sustainability of our forestry, agriculture, aquaculture, advanced manufacturing, and visitor economy industries, and the circular economy is central to these efforts.

All three levels of government have roles in the circular economy, from kerbside collections, landfill management, and environmental regulation at the local government level, environmental regulation, waste initiatives, policy, and economic development at the state level, to national waste policy, competition and consumer law, and product stewardship at the national level, as a few examples. The flow of materials through the economy will interact with various government policy, regulation, and processes through the life cycle. Mapping these flows and identifying the regulatory, policy and operational touchpoints for each level of government, and how governments interact with each other, could be a valuable exercise as part of the inquiry.

For example, many local government areas have introduced Food Organics Garden Organics (FOGO) collection and processing. Where this is not currently feasible, other options are being explored, including supporting residents to compost organic waste, or to use it use as garden mulch or as feed for animals.

The Tasmanian Government has partnered with Tasmania's regional waste management groups to deliver the Rethink Waste initiative, providing a centralised source of information for communities and businesses on how to reduce waste. Biochar produced from organic waste through pyrolysis is a product with many uses and benefits, including multiple agricultural applications, carbon sequestration, renewable energy production, and air and water filtration. Pyrolysis may also have potential applications in recycling or converting plastics into hydrocarbon feedstocks for fuel and manufacturing. Matching feedstock material sources with commercial applications requires collaboration and cooperation between levels of government and with industry.

Transitioning to a circular economy will bring some difficult challenges and great opportunities. The key to a successful transition is working together, sharing knowledge, and collaborating for innovation across all levels of government and with industry.

As an island state, Tasmania is an ideal place to pilot circular economy initiatives at smaller scale, which could then be scaled up for national implementation. Our smaller population enables close networks and relationships between government bodies, industry, and academia, with the University of Tasmania achieving world-leading rankings for climate action and sustainability.

Concluding remarks

The Tasmanian Government recognises the importance of a coordinated and consistent national approach to the circular economy. The circular economy transition calls for supportive policy frameworks, investment in infrastructure, and the development of markets for circular products and services. By working together, Australia can unlock the full potential of the circular economy and create a more sustainable and prosperous future for all.

Tasmania is committed to leading the way in this transition. The state has a strong track record of sustainability and is well-positioned to capitalise on the opportunities presented by the circular economy. The Tasmanian Government looks forward to working with the Productivity Commission and other stakeholders to advance this important agenda.

Should the Commission seek further information or wish to engage Tasmanian Government representatives in relation to the inquiry, please contact the Department of Premier and Cabinet at policy@dpac.tas.gov.au.