DeCarbonate Energy

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Productivity Commission
Level 8, Two Melbourne Quarter
697 Collins Street Docklands Vic 3008

Dear Productivity Commission

DeCarbonate Energy (DC8) submission to the Productivity Commission

DeCarbonate Energy (DC8) welcomes the opportunity to contribute to the Productivity Commission's inquiry into Opportunities in the Circular Economy. As a values-driven enterprise, we are deeply committed to fostering a robust domestic waste recycling system and advancing a sustainable circular economy. This submission reflects our vision to drive positive change and create a better future through innovative and ethical practices in waste management and resource recovery.

DeCarbonate's submission draws on insights from its team's international operations, particular in Europe, and the practical impacts of circular economy policies, highlighting what proves effective, what falls short, and what is most straightforward to implement. We have outlined opportunities that we believe will maximise circular economy outcomes in Australia in an environmentally and economically sustainable way.

About DeCarbonate (DC8)

DeCarbonate Energy (DC8) is a prominent Australian company at the forefront of sustainable innovation, providing cutting-edge technologies that sustainably transform plastic waste and municipal solid waste (MSW) into valuable recyclable resources; yielding significant sustainability advantages for industry. Beyond the technological marvels, our core essence of lies in building Australia's sovereign capability. Committed to environmental stewardship, we recognise our responsibility to drive positive change by advocating for sustainability and actively contributing to the betterment of society. This commitment is rooted in our core values, which emphasise caring for both people and the planet.

Achieving long-term success in diverting waste from landfills depends on collaboration among governments, the recycling industry, and communities to create solutions that safeguard the natural environment and support the well-being of future generations.

DeCarbonate's business model is centred on maximising the recovery of problematic waste streams by diverting them from landfills and sustainably transforming them into valuable commodities and clean energy. This approach ensures that resources stay in circulation for as long as possible - landfilling waste should always be a last resort.

We remain at the forefront of innovation, leveraging our complementary, scalable near net-zero recycling technologies to sustainably process plastic waste and municipal solid waste

(MSW). Designed to meet the evolving sustainability needs of diverse industries, these advanced solutions cater to sectors such as waste management, plastics, chemicals, fuels, energy, and commercial markets.

Overview

Without critical reforms to segregate waste and reduce pollution, prioritise the value of secondary resources, foster the development of circular markets, and restore natural systems, Australia risks falling short of its Net Zero commitments. Furthermore, without these measures, the nation will face significant challenges in building a resilient economy equipped to thrive in a resource and carbon constrained future. At DeCarbonate Energy (DC8), our main priorities are:

1. Boost efforts to divert waste from landfills
2. Enhance MSW recycling throughput to generate uninterrupted Clean Power (EfW)
3. Enhance plastic waste processing to create sustainable and Recyclable Products - *up to 95% of plastic sorts can be recycled*
4. Ensure the oil our plants produce is processed by Australian refineries
5. Keep recycled plastics within Australia
6. Reduce greenhouse gas emissions
7. Reduce the use of fossil fuels

Build Onshore Circular Infrastructure

The federal government's $15 billion National Reconstruction Fund (NRF) marks a pivotal and timely step toward bolstering Australia's circular economy capabilities and systems. With its focus on circular economy principles, sustainability, regional development, and national security, the NRF has the potential to drive transformative change by converting waste streams currently landfilled, incinerated, or exported into valuable products and resources. Additionally, the NRF could play a crucial role in advancing innovative circular economy financing.

However, to fully realise this potential, it is essential to integrate clear definitions and measurable metrics for circularity within the Sustainable Finance Strategy and key government funding initiatives. Without these foundational elements, financing and investment efforts risk falling short of achieving true circular economy standards.

Collaboration

This transformation is one of our most significant ambitions and challenges for the future, and we know we cannot achieve it on our own. A key factor in reaching our goals is collaborating with like-minded organisations, government bodies, and the wider community. We are eager to embrace opportunities to work together and co-create solutions to the challenges we all face.

Economic Levers - Revise Landfill Levies

- **Economic Levers**
  In thriving circular economies, governments leverage subsidies, carbon emissions trading schemes, taxes, and Extended Producer Responsibility (EPR) programs to drive circular behavioural change. These tools should be thoroughly evaluated to enhance the affordability of circular goods and services while encouraging essential

shifts in behaviour. Research by Circular Australia has revealed that Australia's current use of fiscal policy to promote a circular economy is highly limited, highlighting a significant opportunity to explore its potential to guide businesses and consumers toward circular economy practises. A national approach to levy pricing, adoption of the levy portability principle by all jurisdictions, and more transparent management of levy funds are urgently, required. Encourage market development through government and industry partnerships to accelerate and extend the implementation of the National Waste Policy's data actions and bring national consistency to the landfill levy system.

- **Revise Landfill Levies**
  Australia's current waste and recycling policies are inconsistent across states and territories. Regulatory fragmentation creates uncertainty for businesses and deters investment in national circular solutions. The lack of standardised definitions, targets, and reporting requirements impedes coordination. Waste or landfill levies serve as an effective regulatory mechanism to enhance recycling and recovery rates, and they have a significant effect on both the commercial environment of nearly every recycling business. Gradually increasing levies over time has been shown to correlate with higher resource recovery rates and a decrease in waste sent to landfill. In Australia, variations in levy rates across regions and states have given rise to a levy avoidance industry, where waste is improperly disposed of in areas with low or no levies. The Australian Government should encourage the harmonisation of landfill levies nationwide

The Role of Government in Analysing Product Value Chains for Circular Economy

The government play a crucial role in facilitating the transition to a circular economy by conducting independent analyses of product value chains. This analysis is essential for understanding both the barriers and opportunities associated with implementing circular economy principles. By providing independent analyses of product value chains through a circular economy lens, engaging expert panels, understanding available technologies, and offering financial support for business cases and feasibility studies, the government can significantly contribute to the successful transition toward a circular economy. This approach not only enhances sustainability but also promotes economic resilience in an increasingly resource-constrained world.

Circular Economy

- **Progressing the Circular Economy**
  At DeCarbonate Energy (DC8), we acknowledge the immense potential of plastic, a shift driven by the federal government's waste export bans and state-specific container deposit schemes. Shifting to a circular business model offers the dual benefit of generating new revenue streams and attracting different industrial segments, while also reducing risks associated with emerging legislation, resource shortages, and environmental impact.

- **Place Based Circular Precincts**
  Australian and global business and policy leaders are increasingly recognising place based circular precincts as effective frameworks for developing local and regional circular economies. These precincts provide opportunities to establish innovative circular business models, process waste streams, and foster collaboration. A network

of hubs across the country could be managed through the current group (CEMAG) within the Department of Climate Change, Energy, the Environment, and Water. Comprehending a product's value chain within the framework of circular economy principles is essential for understanding the total value that can be generated, as well as identifying areas within the 'circular' value chain where there are imbalances in the distribution of the overall value created. To fully realise this potential, the federal government must do more to support collaborative innovation between industry and regulators.

https://circularaustralia.com.au/wp-content/uploads/2024/09/2024-Circular-Precincts-Australia.pdf, Circular Australia's report found there is significant demand from stakeholders for the establishment of more circular precincts, supported by government and industry funding and overseen by an independent governing body to advance Australia's circular economy transition. This highlights the importance of sandboxing initiatives, where industry and researchers can collaborate with Environmental Protection Agencies (EPAs) and other regulators in a controlled environment to develop innovative methods for recycling secondary resources.

Precincts can serve as incubators for emerging circular economy markets, especially in regional Australia, providing the foundation for the development of new circular waste management services.

DeCarbonate (DC8) recommends utilising precincts as catalysts for developing new circular markets to achieve the 2030 circular economy targets.

- **Circular Economy Market Incentives**

  The federal government could establish new or enhance existing product stewardship schemes with a focus on circular economy outcomes. Mandatory product stewardship or extended producer responsibility schemes would provide funding and independent analysis of their respective value chains, driving circular and net-zero outcomes for each product category. This approach could also support the achievement of other circular economy principles, such as encouraging manufacturers to eliminate waste at the design stage, ensuring waste is used in the most efficient and valuable way, and ultimately contributing to a nature-positive result.

  At a national level, this approach would facilitate the transition of products from linear to circular models, supported by an independent body. Locally, this analysis can build the confidence needed to pursue circular solutions and provide funding for downstream processors. By securing this funding to address circular economy (CE) challenges, downstream processors would benefit, and products designed with CE principles could more effectively compete with higher carbon-emission, non-CE alternatives. Europe is implementing policies and incentives that level the playing field for locally produced low-carbon goods, such as tariffs on carbon-intensive imports. This would make high-carbon imported products less competitive compared to local products that follow circular economy and low-carbon principles. Introducing national circular economy standards for consumer goods could, for instance, require manufacturers to design products like plastics with recyclability in mind. A clear labelling system informing consumers about recyclability would be an added benefit. By aligning trade and economic policies with our circular and net-zero objectives, we can create a fairer

market for sustainable products and drive more investment in local, low-carbon manufacturing.

- **Circular economy funding**
  Currently, most State and Federal government funding for circular economy initiatives is provided through contestable grants, awarded on a project-by-project basis. This approach often leads to an ad hoc and fragmented effort in achieving circular economy outcomes. While some projects have been successful, a more coordinated and strategic approach could yield significantly better results. A dedicated, ongoing capacity-building fund should be established, allocated to trusted, place-based organizations that can help meet national targets and drive long-term circular economy outcomes.

  Stable, ongoing funding is crucial, especially as many States now impose levies on landfilled waste. However, it is estimated that only 3% of waste levies are redirected to local governments to address waste management issues and advance circular economy goals. A national dialogue is needed to address the funding landscape, ensuring that all forms of government support including capacity-building grants, venture capital, and business finance are aligned to help local and state governments drive circular economy initiatives.

  In addition, the federal government could continue and expand funding for research into circular economy technologies, such as advanced recycling, bio-based materials, and digital tools for tracking material flows. Collaboration among governments, universities, and the private sector will be essential for fostering innovation and advancing circular economy solutions.

- **Circular economy regulatory framework**
  The transition to a circular economy cannot occur without addressing regulatory barriers and replacing them with frameworks that support circular principles. Without this shift, achieving net-zero outcomes will be at risk. To enable this, structured, regulated "sandbox" opportunities combined with enhanced government business support could foster collaboration and drive real solutions to circular economy challenges. Other industries, such as energy and pharmaceuticals, have successfully created innovation pathways to solve problems and foster breakthroughs; the circular economy requires a similar approach.

  A "sandbox" regulatory environment, paired with a clear approval process, would offer businesses the certainty needed to invest in circular economy initiatives. This environment should also incorporate "better off overall" net-zero principles, allowing environmental protection agencies (EPAs) to introduce best practices in environmental protection within the “sandbox”. By testing real-world scenarios alongside these principles, stakeholders can co-develop solutions that align with sustainability goals, de-risking the process for all involved.

  This model would likely be most effective at the state government level, though a national regulatory summit could be convened to develop consistent standards for the circular economy. Such alignment would facilitate cross-border solutions and encourage national progress toward a circular economy, rather than having states compete for limited resources and ideas. Once the circular economy is more established, healthy interstate competition could resume to further advance the field.

  State government approval pathways should also aim for greater clarity and efficiency. This could include developing streamlined approval processes (e.g., a two-year timeline) or allowing for longer validity of SEARs (Statements of Environmental Effects). It is also essential to build expertise within government agencies to understand the proposed processes fully. Moreover, any assessment frameworks should incorporate the impact on emissions reductions and net-zero targets, as current

pathways often overlook the carbon reduction benefits integral to circular economy solutions.

Closing Statement

As a company dedicated to Australia's circular transition, we are eager to share the knowledge and insights gained from our team's work around the world on this challenge, particularly in Australia.

Please feel free to contact us if you require any further information regarding this submission.

Yours sincerely

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