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Lodged via e-mail: circulareconomy@delwp.vic.gov.au

Dear Victorian Government,

A circular economy for Victorian, creating more value and less waste Issues paper

The Clean Energy Council (CEC) is the peak body for the clean energy industry in Australia. We represent and work with hundreds of leading businesses operating in renewable energy and energy storage along with more than 6,000 solar and battery installers. We are committed to accelerating the transformation of Australia's energy system to one that is smarter and cleaner.

The CEC welcomes the opportunity to provide feedback on a circular economy for Victoria, creating more value and less waste issues paper. The CEC supports the general approach outlined in the paper. This is a critical policy for securing a strong and viable recycling sector and addressing risks to industry arising from the China National Sword policy, on imports of solid wastes as raw materials.

Being environmentally responsible is also part of the broader CEC strategy and minimising environmental impacts is a core aim of renewable technology. Developing product stewardship is a vital step in ensuring that renewable technology is environmentally responsible throughout all stages of the product lifecycle, from the design and development stage through to product end-of-life.

We believe the policy would be significantly enhanced with the expansion of the e-waste stream. The need for product stewardship is rapidly becoming more urgent. E-waste is one of the fastest growing waste streams in Australia and due to the limited lifespan of solar photovoltaic (PV) panels and battery energy storage systems (BESS), distributed energy resources (DERs) are set to be an ever-growing part of this. Common examples of DER include rooftop solar PV panels, battery storage, electric vehicles and chargers, smart meters, and home energy management technologies. These separate elements work together to form distributed generation.

The importance of a response to this problem from government and industry is therefore growing. The problem of what to do with energy systems at end-of-life will become an increasingly perplexing one for consumers if a strong recovery and recycling industry is not developed. Consumers and government will increasingly look to manufacturers to provide sustainable and recyclable products, as well as potential funding for government recycling schemes.

It has been heartening to see the state of Victoria taking action to help tackle the problem with a ban on e-waste in landfills effective from 1 July 2019, and that solar PV panels and system accessories (all DERs) were listed by the Federal Government under the Product Stewardship Act in the June 2016-17 Product List. This was a signal from the government that they see recycling of these products as a priority. Listing products is a prerequisite for regulation.

The opportunities for reclaiming and recycling renewable technology products at their end-of-life is significant but remain largely untapped. A fully operational model for management of these products in Victoria would be a welcome step forward. Notwithstanding the potential for attracting renewable technology manufacturing to Victoria with a knock-on benefit for job creation and investment. This will help to prepare Victoria for a future with increased renewable technology waste.

By increasing skills and expertise and driving product stewardship in renewable technology, producers and manufacturers will better manage their end-of-life products to maximise utilization of resources embodied within the waste. This will result in the return of benefits with a circular economy for Victoria.

The CEC will promote Victorian product stewardship in a leading communications and information dissemination and industry coordination role. The CEC currently runs programmes that help safeguard the quality of small-scale solar PV panels, inverter and battery products as well as the quality of their installation, extending into promoting the safety of product de-installation. Reuse, refurbishment and recovery is a natural and necessary next step.

Circular economy benefits include

- By 2030 a more circular economy could deliver many major job creation benefits while producing no, or minimal, waste and pollution
- Procurement policies supporting purchase of products with recycled content will boost industry development and enable rapid movement towards a true circular economy
- At Davos 2018, bosses paint climate change as a AU$7.45 trillion opportunity1 [1]
- A circular economy will also lead to a large reduction in greenhouse gases

Japan, Belgium, China, Scotland and South Africa are currently leading the way in a transition to a circular economy.

Renewables technology considerations

The Clean Energy Council and the renewable energy industry has so far focused on the safe design, development and installation of DERs, however little has been done to ensure safe disposal of these technologies. Batteries specifically contain potentially dangerous materials including acid, lithium and heavy metals (e.g. cadmium, cobalt, and lead). When batteries are simply left in landfill, these chemicals can leak into the soil and groundwater resulting in bioconcentration in the food chain.

E-waste is an unavoidable consequence of renewable technology. This is particularly true of DERs, including solar PV panels and BESS as opposed to utility-scale technologies, with one study conducted in the United Kingdom suggesting that around 75% of e-waste is generated by households.[2] However, with the current upswing in

[1] The Sydney Morning Herald (2018). *At Davos, bosses paint climate change as $7 trillion opportunity.* https://www.smh.com.au/business/at-davos-bosses-paint-climate-change-as-7-trillion-opportunity-20180126-h0owt1.html
[2] Waste Management Review (2018). *Victorian e-waste ban to landfill breakdown.* http://wastemanagementreview.com.au/e-waste-vic/

large-scale renewable developments in Australia, the disposal of e-waste generated by utility-scale technologies must also be considered by the Victorian government.

Delivering Product Stewardship

The CEC and Australian Battery Recycling Initiative (ABRI) has developed a Best practice guide for recycling, storage and transport of battery energy storage systems (BESS).

In the longer-term, the CEC supports a variety of initiatives to establish product stewardship for solar PV panels and BESS. These include:

- industry and government collaboration to set up a national network of drop-off points for batteries, solar PV panels and other DERs
- support for the expansion of local recycling operations
- co-ordination with industry to develop a collection service for renewable energy products at end-of-life

We support the Victorian Government:

- taking steps to understand the barriers for the development of the e-waste recycling industry
- recommending e-waste be recycled by a recycling Company compliant with AS/NZ 5377: 2013
- advocating for further development of AS/NZS 5377:2013 Collection, storage, transport and treatment of end-of-life electrical and electronic equipment to point the industry in a common direction
- continued engagement between recyclers and the renewable industry including manufacturers
- collaboration with industry to set up a network of drop-off points for batteries, solar PV panels and other DERs
- expanding local recycling operations to be able to take e-waste
- provide clear communication to industry and consumers on the importance of recycling products. The ABRI/CEC responsible recycling of battery storage is a good resource

If you would like to discuss this submission, please contact Ms Maryanne Coffey on (03) 9929 4137 or mcoffey@cleanenergycouncil.org.au.

Maryanne Coffey
Emerging Technologies and Projects Manager
Clean Energy Council

Attachment A: CEC responses to Circular Economy Issues Paper Survey

Q1. Is this a useful definition of circular economy?
Yes

Q2. Do you think Victoria should pursue a circular economy?

Yes. The opportunities for reclaiming and recycling renewable technology products at their end-of-life is significant but remain largely untapped. A fully operational model for management of these products in Victoria would be a welcome step forward. Notwithstanding the potential for attracting renewable technology manufacturing to Victoria with a knock-on benefit for job creation and investment. This will help to prepare Victoria for a future with increased renewable technology waste.

Q3. Are there other benefits of a circular economy that should be considered in developing the policy?

- local job creation and exploring new business models and investment opportunities for recycling.
- recycled content to support the Australian manufacturing and recovery industry

Q4. Which parts of the economy, which materials, or which activities should be a priority focus for Victoria's circular economy policy? Why?

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The importance of a response to this problem from government and industry is therefore growing. The problem of what to do with energy systems at end-of-life will become an increasingly perplexing one for consumers if a strong recovery and recycling industry is not developed. Consumers and government will increasingly look to manufacturers to provide sustainable and recyclable products, as well as potential funding for government recycling schemes.

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Q5. What issues will the government need to consider or manage in the shift to a circular economy?

Alignment with UN sustainable development goals and no 12, sustainable production and consumption.

Q6. Would the shift to a circular economy adversely affect your industry?
The clean energy industry would only benefit from a shift to a circular economy. Indeed, as a future focused industry we are already asking for urgent action on recycling of renewables industry e-waste products including the set-up of suitable recycling centres.

How could government mitigate these effects?
BAU is more dangerous and potentially harmful to consumers, the environment and clean energy industry than acting on recycling of e-waste.

Q7. How do you think the Victorian Government should measure and report on progress toward a more circular economy?

- appropriate compliance check for recycling
- appropriate materials

Q8. What are the most effective actions the government can take to shift Victoria to a circular economy?

- recognise and reward the value of e-waste recycling
- remove regulatory barriers to e-waste recycling
- level the playing field for the e-waste recycling industry
- support for innovation and critical e-waste recycling infrastructure

procurement policies supporting purchase of products with recycled content will boost industry development and enable rapid movement towards a true circular economy