



28 July 2023

Tabor Akman
Product Stewardship Regulatory Schemes & Reform section
Department of Climate Change, Energy, the Environment & Water

Dear Mr Akman

Clean Energy Council Submission to Wired for Change: Small Electrical Products and Solar PV Systems

The Clean Energy Council (CEC) welcomes the opportunity to provide feedback to the Department of Climate Change, Energy, the Environment and Water (the Department)'s public proposal on regulatory approach to product stewardship for electrical/electronic-products (e-products), solar photovoltaic (PV) systems and small electrical and electronic equipment (SEEE).

The CEC and its members support a scheme that is dedicated to solar PV waste, insofar as market failures exist. This submission focuses on consumer energy resources (that is, household solar PV systems) in terms of its inclusion in regulated product stewardship scheme. At the outset, we note that the products included in solar PV waste scheme are fundamentally different in nature and composition, and therefore the scheme should incorporate a specific and distinct focus on the recycling needs and context of the different products.

Recycling of solar PV panels represents a significant market failure and requires government intervention to assist in managing the solar PV panel waste. Other components of solar PV systems – such as inverters, racking and batteries – are currently being managed by industry. For example, original equipment manufacturers (OEMs) of products, such as batteries, are making headway in the retrieval and recycling of their own products, and components, such as racking and inverters, are easily recycled with a high value return.

The CEC recommends that household energy storage batteries are not included in the scheme. Energy storage battery recycling is starting from a stronger position than consumer batteries, reflecting the easier to manage logistics chain. Companies are demonstrating leadership and initiative to recycle these batteries. Pleasingly energy storage and large battery OEMs and the battery recycling industry are collaborating on the recycling of energy storage batteries. While further work is required, this is a positive starting point.

The CEC and its members are largely supportive of DCCEE's proposed model for establishing a recycling stewardship scheme with some amendments that are outlined below.

Thank you for the opportunity to comment and if you would like to discuss any of the issues raised in this submission, please contact Emily Perrin on eperrin@cleanenergycouncil.org.au.

Yours Sincerely

A handwritten signature in black ink that reads "Perrin". The letters are cursive and fluid, with a large initial 'P'.

Emily Perrin
Policy Officer Distributed Energy
Clean Energy Council

Questions on the Proposal to regulate e-products

Introduction

1. I am an Industry Body

2. How concerned are you about solar PV system waste?

Very concerned

5. Do you think government intervention (such as regulation) is needed for Australia to better manage solar photovoltaic system waste?

Yes, insofar as it relates to solar PV panels, and other elements that are not being properly managed by industry. Recycling of solar PV panels represents a significant market failure and requires government intervention to assist in managing solar PV panel waste.

Other components of solar PV systems – such as inverters, racking and batteries – are currently being managed by industry, e.g., original equipment manufacturers (OEMs) of such products are making headway in the retrieval and recycling of their own products. In particular, industry-led management of batteries already exists.

6. Do you think there is sufficient information available to consumers on how their choices can reduce e-waste and how to safely manage e-waste?

No

7. What additional information do you think should be made available to consumers?

- Information on the difference my purchase and disposal choice can have on human health and the environment.
- Accessible information on how I can easily dispose of my unwanted e-waste.
- Easily understood information on the impacts if my e-waste goes to landfill.
- Information on the rules relevant to me in my state/territory and what I should do to comply with these rules.
- Other:

Consumers need to be sufficiently informed that to increase Australia's competitiveness in the global economy, regain a useful level of innovation capability and manufacturing capacity we cannot afford to allow the valuable materials in end-of-life solar panels go to 'waste' or be sent overseas for any purpose.

There also needs to be adequate information available to industry, in particular installers and retailers of solar PV systems when upgrading old systems resulting in solar PV waste from the old system.

8. Select one or more of the following objectives you think the scheme should focus on.

- Reduce waste to landfill.
- Increase the recovery of reusable materials.
- Provide convenient access to e-stewardship services across Australia.
- Support Australia's transition to a more circular economy.
- Foster shared responsibility across the lifecycle of covered products.

9. What objectives should be included or excluded?

Include:

- Supporting the establishment of the facilities and infrastructure that will ultimately manage the end-of-life PV panels, i.e., the work of breaking down the solar PV panels and recover the materials.
- Further ambition to coincide with Australia's ambitions to develop a circular economy – this includes:
 - Assessment of recovery of reusable materials, namely, the future use of recovered materials, to ensure highest value reuse. This would involve setting high standards for the recovery of materials from end-of-life.
 - Set standards that the Network Operators in the solar PV recovery process must abide by. This could involve having an accreditation for the Network Operators which detail the following:
 1. Volume of panels processed per annum
 2. Percentage of materials recovered for recycling
 3. Quality of materials recovered for recycling
 - Australia needs to (re)build its manufacturing capability, particularly in the clean energy sector. All end-of-life panels should be processed to recover all valuable components for remanufacturing into large, low cost, efficient Australian manufactured panels.

Exclude:

- Only focussing on establishment of access to e-stewardship services – 'Network Operators' can do this and the infrastructure to actually manage the incoming waste needs to be established first, the demand for the infrastructure already exists.
- Encouraging repair and re-use for SEE and not solar PV systems at the moment. This is because as things currently stand, this practice is not compliant with Australian standards and regulations. Standards and rules are changing rapidly to keep up with the technology of the solar revolution in Australia with older panels no longer meet the requirements meaning they are noncompliant, therefore installing them can be illegal.

Scheme administration

Members have raised concerns about the terminology used. The CEC encourages further clarification and understanding around what each role of the proposed structure will include. For example, Network Operators and Recyclers are terms used in the proposal to cover numerous services that require their own definition and recognition in the value chain of recycling. Network Operators may collect, process and recover or they may only process and recover. Additionally, 'recycling services' requires definition, recovery necessarily precedes recycling and recovered materials are not always recycled, therefore materials recovery is a pre-condition to recycling and should be defined. As is consistent with a circular economy, the sequence includes collection, processing, materials recovery, recycling of recovered recycling, and remanufacturing.

Furthermore, how the PV e-waste process is designed for each waste category requires consideration. We suggest a sub-classification of PV system waste as follows:

- a) PV panels

- b) Racking
- c) Electric (non-battery) e.g., inverter, cables, etc.
- d) Battery

The proposed scheme should include the important role digital materials tracking and tracing can play in data collection and compliance with the scheme. As noted in the discussion paper (page 26), in Italy panels and materials are tracked to end of life through serial numbers. Digital tracking could also be applied in Australia. The Clean Energy Regulator (CER) already requires installers to scan and upload solar panel serial numbers to the CER-run database to confirm with manufacturer supplied data that the installed solar panels are verified. This could ultimately be used to track panels through their entire lifecycle.

Liabile parties' responsibilities

The proposal would have liable parties pay fees to the scheme administrator based on their import and or production activities in the prior 12–24 months. We agree that this would enable the scheme administrator to access revenue from the time they are required to start meeting scheme targets and obligations.

We consider there may be a place for fees set by government if there are costs for services that are provided outside of the scheme that must be recouped and cannot be effectively recovered via the scheme. An example of this may be to cover added costs to councils who allow the scheme to utilise existing council facilities as collection sites. Appropriateness of such fees would depend on the mechanisms that are developed as part of a plan to provide access to convenient e-stewardship services Australia wide.

DCCEEW's paper outlines that it does not propose that collection centres are funded from the scheme administrator, and that the collection centres would not be able to charge for drop-off of PV system waste. We do not think this will result in a convenient, efficient, and cost-effective supply chain that can be utilised by trades and the public.

We agree that when disposal costs have been factored into the purchase price of equipment there should be no charge to drop that waste at a collection centre. However, without some degree of funding from the administration scheme that manages the funds collected to pay for the disposal of that waste, it is unlikely that a convenient and effective supply chain will develop. There is no incentive for existing waste collection sites to expand their collection types.

What is convenient disposal for an individual will not correlate with an ideal collection system for a network operator. The success of the scheme hinges on how well the public can use it, which means that accessing a collection centre must be easy, and the collection centre should take all the e-waste that an individual wishes to dispose of in one place.

Scope

The CEC recommends that household energy storage batteries are not included in the scheme. Energy storage battery recycling is starting from a stronger position than consumer batteries, reflecting the easier to manage logistics chain. Companies are demonstrating leadership and initiative to recycle these batteries. Pleasingly energy storage and large battery OEMs and the battery recycling industry are collaborating on the recycling of energy storage batteries. While further work is required, this is a positive starting point.

B-cycle has been successful in driving a step change in the collection of loose consumer batteries, and is working to broaden the type and size of batteries included its scheme, and has established a

large network of collection sites. It has a different logistics chain to batteries embedded in electrical and electronic products and it is important that this network continues.

The Australian battery recycling sector is investing in capacity to meet the opportunities presented by electrification and demands from OEMS for battery recycling capability. The Association for the Battery Recycling Industry (ABRI) has 50+ members committed to a battery circular economy for all chemistries including lithium, lead, alkaline and zinc carbon batteries. ABRI members, who are Australian companies, are innovating and investing to develop manufacturing opportunities arising from electrification. They are driving investment in Australian intellectual property in conjunction with Australian universities to recover the critical minerals from energy storage batteries.

The energy storage battery recycling market is a separate market to consumer batteries (loose and embedded) with different dynamics. Battery weight and quality, manufacturers, logistics chains, data collection and tracking, and handling requirements are not comparable to the consumer small battery market. It should be noted that there exists a subset of products that are not being managed by the responsible OEM, this should be noted but should not discount or inhibit the industry-led advancement in managing end-of-life batteries and inverters by OEMs.

Scheme arrangements for solar PV

36. The paper suggests less than 100 kW capacity as the definition of small-scale solar PV systems eligible for free services (where they were installed prior to the scheme commencing). What definition do you suggest from the list below?

- 0-15 kW (predominantly households)
- 0-50kW (mostly households and small business)
- Agree with the less than 100kW proposed (households and businesses)

Are there any other comments you would like to make in response to the paper?

In effect, the size of the scheme is irrelevant. There is a general responsibility to ensure that valuable materials in EOL solar panels are fully recovered. We recommend:

- Encouragement for local governments to keep all end of life solar PV panels and systems from all landfills
- Consultation with local governments in all states to understand both current and future arrangements being made.
- Direct consultation with large scale solar system managers and owners in all states to explain the proposed scheme
- Provision of collection services: engagement with established logistics companies to design efficient transport arrangements to remove existing, stored panels and those that will reach end of life until the end of 2025.

And finally, education of not only the public, but also tradespersons involved in the decommission of sites must be educated on the correct disposal of the waste. Disposal of rooftop PV systems will be required to be undertaken by trades, since the removal of PV systems must be undertaken by licenced professionals. In this case, it is likely that a collection facilities in major centres (metropolitan and regional) would be suitable since these would be collecting one specific waste stream. An education program for trades regarding the e-waste disposal requirements and mechanisms would also be of benefit when current awareness levels are considered.