

## Statement of Opportunity in relation to the Reuse of Solar Panels. *Developed by Latrobe Valley Community Power Hub April 29th, 2020*

### **Background/Context**

The total environmental impact of the use of PV systems must take into account the lifecycle of the product. International Renewable Energy Agency (IRENA) stated in 2016 “Global PV module waste was projected to reach 1.7–8 million tonnes by 2030 and 60–78 million tonnes by 2050 which will likely reach the same order of magnitude as global electronic waste”. Sustainability Victoria reports that by 2035 there will be 22,000 tonnes of PV panel waste requiring disposal in Victoria and 100,000 tonnes nationally and will enter a critical stage in Australia from approximately 2023 owing to the wide-reaching deployment of PV panels in the past two decades.

The University of New South Wales and others continue to research glass, mechanical and thermal recycling options and intends to research methods to assess and separate end-of-life panels to reuse and recycling streams (as per discussions with Dr Richard Corkish of the UNSW School of Photovoltaic and Renewable Energy Engineering 2020) however a recent paper by Sajjad Mahmoudia (2020) from Macquarie University concludes that “the plant with a yearly capacity of 10,000 tonnes EoL PV panels did not show profitability at any condition unless the Australian government considers a special tax-exemption during the loan lifetime.”

We believe that repurposing panels could effectively divert much of this waste and provide a low-cost energy solution for community and not for profit groups. The Latrobe Valley Community Power Hub are committed to a partnership with Federation University and the Latrobe Valley Authority to investigate the residual efficiency and safety of second hand PV panels but are limited by legislative blockers. This is due to two distinct issues relevant to the Clean Energy Council and the Clean Energy Regulator that if addressed would change the opportunity and financial viability to ensure that systems deliver their full potential and contribute to a circular economy rather than being scrapped with life and value remaining.

### **Latrobe Valley Community Power Hub opportunity and identified issues**

Investigations conducted this year by the Latrobe Valley Community Power Hub (LVCPH) led to an opportunity to have a large number of solar PV panels donated for reuse within the community. After many negotiations and consultations, the LVCPH came to the conclusion that such a donation would be unusable and uneconomic in any system that was grid connected due to two distinct issues that the LVCPH would like the Clean Energy Council and the Clean Energy Regulator to consider.

Issue 1 relates to Small-scale Technology Certificates (STCs) and Large-scale Generation Certificates (LGCs)

There are two parts to this issue:

Part One relates to the Renewable Energy Target and Accounting. In the case of the example system it was purchased 10 years ago and at that time the installer would have claimed STCs via the Clean Energy Regulator and passed these on as a discount to the customer. The STCs would have been granted under the assumption that the panels would remain in use for twenty years. These would have been counted towards the Renewable Energy Targets set by the Government.

If these panels are removed after a shorter period (10 years in our example case) due to the opportunity to install a higher capacity system (as was the case) then the renewable energy generated by the system is half what has been accounted for. This also means that the original installer has received a rebate for renewable energy generation that will never be achieved.

This does raise the question of whether an owner of a solar array should be required to refund the undeliverable portion of the original rebate. If a system had claimed LGCs which are claimed yearly, then it needs to be confirmed that they can still apply for LGCs if they are re-deployed to a new site. This would present an opportunity for re-deployed panels to contribute to the Renewable Energy Target.

Part Two relates to the business case for re-deploying a solar PV system. A second-hand panel has no opportunity to get any form of rebate as an STC. If the STCs moved with the panels/system, then this would create an opportunity for older solar panels to be re-used and fulfil their expected renewable energy generation potential or contribute to the Renewable Energy Target in the case of LGCs. The application of STCs recovered from the previous owner would nearly offset the installation costs of the second-hand panels which would then be available for those in need such as social housing or community organisations.

Issue 2 relates to the Clean Energy Council approval of solar panels.

This is a critical role conducted by the CEC to ensure that shoddy products are not released into the public. The testing and listing of these panels on the approved list require a fee from the maker/importer. Once the panel is older and becomes obsolete there is no incentive for the maker/installer to continue to pay for the registration as there will be no sales of that item.



**COMMUNITY  
POWER HUB  
LATROBE VALLEY**



This registration is critical. If a panel is not registered, then it will not be used in any grid connected system as electricity distribution business' such as Ausnet Services (the distributor in our test case) also apply the need for CEC approval as a prerequisite for solar PV installation.

The removal of the panel from the approved list is not due to safety reasons but due to non-payment by the maker/importer. This fundamentally means that almost all panels of more than two years of age will no longer have approval. This is a major roadblock to the reuse of second hand panels which could potentially be removed if instead of deletion of panels from the approved list when payment ceases, they instead be moved to a listing of obsolete panels.

This would list panels which had previously been approved (along with any later conditions – e.g. only suitable for non-habitable buildings due to non-compliance with fire ratings). Having them listed as such would then make acceptance by Ausnet and other regulatory groups of those panels much easier.

### **Concluding thoughts**

Overcoming these two issues would create an opportunity for a second hand solar PV market. This would not only contribute to a circular economy but would assist those in the community who have not been able to access solar PV due to cost barriers such as social housing providers and community organisations. There is also a significant opportunity for second hand panels to contribute to the Renewable Energy Target if they had claimed LGCs on a yearly basis at their original installation site.

The Latrobe Valley Community Power Hub would welcome further discussion around how these issues can be addressed. We remain committed to developing an industry in repurposing these recycled panels and are keen to begin trials with Federation University on the efficacy and reliability of used systems however without a way forward through the issues we have raised any solution appears doubtful.

Yours sincerely,

Cr. Darren McCubbin

Chair

Latrobe Valley Community Power Hub (GCCN)

71 Hotham street, Traralgon 3844

0458 006 486



INFORMING  
CONNECTING  
ACTING