

QUEENSLAND SOLAR PANEL RECOVERY PROGRAM

Frequently Asked Questions

Who funded the Queensland Solar Stewardship Pilot?

The Smart Energy Council managed the delivery of the Solar Stewardship Pilot with support of funding from the Queensland Government between 2024 and 2025.

What was the objective of Queensland Solar Stewardship Pilot?

The objectives of the pilot were to design a recovery and recycling ecosystem for solar panels and to capture insights and learnings to help inform a national scheme for solar panels while also ensuring the community had access to guidance and education resources about solar panel stewardship. The combined solar panel recovery target was between 20,000 and 30,000 panels to be recovered. The pilot recovered 23,587 panels.

Can solar panels be recycled in Australia?

Yes. There are a number of recycling facilities here in Australia in Queensland (QLD), New South Wales (NSW), Victoria (VIC) and also plans for sites in SA and WA.

What are the factors taken into account when deciding the location of collection points and recycling facilities?

The location of recycling facilities are determined by commercial factors such as transport routes and optimisation, end market customers and regulatory factors including local zoning.

What percentage of materials can be recovered from solar panel recycling?

Up to 95% of the materials can be recovered. The 5% that is 'not recoverable' is mostly a mix of plastics often "contaminated" with other materials. Depending on the local regulations, this usually goes to landfill.

What materials are recoverable from solar panels in Australia?

Solar panels contain valuable and finite resources like glass, aluminium, silver, silicon, and copper. Recovering them reduces reliance on virgin materials and supports Australia's critical minerals strategy.

How much does it cost to recycle one tonne of panels?

Cost information differs by metro, regional and remote locations and reprocessing technology. This information is commercially sensitive however SEC has included some cost findings in the pilot reports which will be available on the SEC website after release.

What do we need to ensure suitable markets exist in Australia? Are you confident there are industries that can take the separated materials domestically?

Ongoing investment in end market innovation and consistent material supply is needed to ensure viable and profitable outcomes and material circularity for the solar stewardship ecosystem. We know there are environmental and economic benefits to ensuring suitable markets are available for recovered material. This is just one reason why the SEC is advocating for a mandatory national stewardship scheme for solar panels and national recovery pilot.

What is the environmental impact of recycling solar panels?

The increased demands on critical minerals for example with data and AI technology and energy transition is putting pressure on the supply. The International Energy Agency (IEA), suggests that the only way to solve this problem is through urban mining. Urban mining turns end-of-life solar panels into next-generation resources while cutting carbon emissions, saving water, reducing waste and pollution, protecting biodiversity, and strengthening supply security.

What are the economic benefits of recycling solar panels?

Each panel contains valuable materials such as silver, copper, and silicon. This represents around \$6.5 billion worth of recoverable materials, highlighting a significant economic opportunity. Excitingly, Australia is a global leader in solar recycling innovation which has potential to uplift domestic manufacturing, employment growth and importantly, is a pathway for critical material sovereignty.

What practical steps can solar installers take to support panel recycling?

Installers are the first point of contact at decommissioning and are uniquely positioned to capture panels before they are discarded or sent to landfill. Installers can get more information on solar stewardship by completing the SEC's 20pt CPD course. Sign up as Smart Installer to get access to our learning platform, or logging by clicking here.

In which condition and efficiency will the old panels be decided to be reused?

The reuse testing process involves three stages:

- Visual inspection where physical damage such as cracks, delamination, or corrosion is identified.
- Electrical testing (EL/IV) to assess performance and degradation levels.
- Wet leakage testing to – verify insulation integrity and safety compliance.

Panels meeting all criteria were deemed suitable for secondary use in domestic, community, or off-grid applications. The cost of testing is considered commercially sensitive however the SEC has shared some cost findings in the pilot reports which will be available on the SEC website after release.

In the trial, what was the ratio of reuse to recycling?

The scope of the pilot program did not include establishing a reuse market for tested panels. Rather, it identified a suitable testing process which could be deployed at scale. Of the 5,067 panels chosen for scientific testing (visual inspection), 2,200 panels moved forward to Electrical testing (EL/IV). Subsequently, 1,869 panels (37% of the total) successfully passed the wet leakage testing. All panels recovered under the pilot were sent for recycling.

Can old panels still produce enough energy to be useful?

Yes. The average decommissioned panel in Australia is only 8 years old, and most can operate for another 10–15 years with solid energy output.

What can we do to encourage continued use on functional solar panels where possible?

A number of pre-requisites are required to be developed before a viable and scalable PV panel reuse ecosystem will be established. Areas for consideration include standards and certifications for a secondary use market, infrastructure requirements, panel design, financial incentivisation as well as traceability requirements, governance and education.

What does the SEC think about the waste hierarchy where reuse is first considered for any good condition/working PV panels ahead of recycling?

The Queensland Solar Stewardship Pilot provided valuable insights into how reuse and recycling can operate as complementary pathways within a coordinated solar stewardship framework. The pilot confirmed that both approaches are technically feasible, environmentally beneficial, and socially supported when underpinned by appropriate infrastructure, testing protocols, and policy alignment.

Is there any discussion about redirecting a portion of the incentives from new PV installations, such as STCs, to fund end-of-life solutions?

How stewardship schemes are funded to support end of life solutions is a critical component of their design. The SEC is advocating for a mandatory national stewardship scheme for solar panels which requires Government support and an understanding of regulatory impact. Existing mechanisms may be considered within this analysis.

Are PV inverters included in the mandatory stewardship scheme? Or are these easier to test or recycle as e-waste/scrap metal?

No. The SEC recognises the importance of recovering all recyclable materials within the sector however the Queensland Solar Stewardship Pilot prioritised solar panels for the analysis.

Is there any support, such as subsidies, from the Australian government for recycling or reusing used solar panels?

Various Federal and State Government grants are available from time to time. Government grants can be found at <https://business.gov.au/grants-and-programs>.

What was the government's response to the proposed national stewardship scheme & what's the expected timeline?

The SEC provides the Federal and State Governments with insights and support for their solar stewardship investigations. The SEC awaits their advice on progressing a national mandatory scheme for solar panels.

For more information on solar panel stewardship, contact stewardship@smartenergy.org.au or visit <https://smartenergy.org.au/reuse-recycle/>