

PV Recycling 101 Guide

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Rooftop solar photovoltaics (PV) is the second largest source of renewable electricity generation in Australia, accounting for [11.2 per cent of Australia's electricity supply](#). With over 3 million Australian homes hosting solar panels on their roofs, understanding the importance of PV recycling and the processes involved becomes paramount for consumers as these panels near their end-of-life.

Importance of PV Recycling

Recycling PV modules instead of disposing them in landfills helps prevent the potential for toxic and hazardous substances from entering the environment. While [Victoria](#) is currently the only state or territory to ban PV panels from landfills, the rest of Australia is expected to participate in nationally led product stewardship measures for PV systems.

Effective recycling processes also conserve high-value and scarce metals such as silver and energy-intensive materials like silicon, aluminium and glass. This reduces energy consumption and carbon emissions from the extraction and processing of virgin materials, while also contributing to the security of critical resource supply.

The use of recovered materials from PV recycling in the manufacturing of new modules could also support the [Australian Government's](#) \$1 billion push to establish domestic solar panel manufacturing. By integrating PV recycling with domestic manufacturing, Australia has the opportunity to establish a new, sustainable, and secure industry that not only reduces environmental impact but also strengthens economic resilience and independence.

Knowing When to Replace

Solar panels typically have a lifespan of 20 to 30 years, but factors such as weather conditions and maintenance can either shorten or extend their lifetime. Additionally, the average lifespan of other system components [varies](#), with inverters and batteries often requiring replacement within the lifetime of PV panels.

Solar component	Average lifespan
Solar panel	20-30 years
Battery (lead acid)	5-10 years
Battery (lithium-ion)	10-15 years
String inverter	10-15 years
Micro inverter	20-25 years

Therefore, consumers should regularly monitor system performance and contact their solar retailer or installer if energy output is lower than expected. They can assess the system and advise if any components need replacement.

Consumer Responsibility and the Recycling Processes

As mentioned, PV recycling carries significant importance. Therefore, consumers have a responsibility to undertake proper disposal practices for end-of-life solar panels to minimise environmental impact and promote sustainability.

A licensed electrician should be engaged to safely remove and/or replace solar panels. It is recommended to look for a [solar installer accredited by Solar Accreditation Australia or the Clean Energy Council](#).

The decommissioned solar panels can then be recycled within designated recycling facilities across Australia including PV Industries, ElecSome, Gedlec Energy and Resolarcycle. Some companies may charge a recycling fee and require consumers to transport the old panels to them.

There is also a need for innovative recycling technologies in Australia. While existing recycling companies can manage the delamination (or separation) of panels, they often send the materials to recovery facilities lacking specialisation in PV modules, potentially lowering value and output yield.

Consumers are encouraged to spread awareness about PV recycling among peers and communities, fostering a culture of sustainability and environmental responsibility.

Key takeaways

Adopting solar energy is not just about generating clean power; it's about embracing a circular approach that encompasses responsible end-of-life management. By recognising the significance of PV recycling, knowing when to replace panels, and engaging in proper recycling processes, consumers play a key role in contributing to a more sustainable future powered by solar energy.