

Waste crisis looms as thousands of solar panels reach end of life



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Thousands of ageing rooftop solar panels represent a toxic time-bomb and major economic waste unless Australia acts swiftly to keep them out of landfill, conservationists and recyclers say.

Australia's enthusiastic embrace of rooftop solar has brought clear environmental and economic benefits, but critics say governments have dragged their feet in addressing the looming waste crisis.

As of December more than 2 million Australian households had rooftop solar installed. The uptake continues to grow due to the technology's falling cost and rising electricity bills.



Australians have embraced the rooftop solar revolution, but critics say governments are lagging on managing the waste. JUSTIN MCMANUS

Photovoltaic panels last about 30 years, and those installed at the turn of the millennium are nearing the end of their lives. Many have already been retired due to faults or damage during transport and installation.

The nation's environment ministers in April last year agreed to fast-track the development of new product stewardship schemes for photovoltaic solar panels and associated batteries. Such schemes make producers and retailers take responsibility for an item across its life cycle.

However, Total Environment Centre director Jeff Angel, a former federal government adviser on product stewardship, said action was long overdue and the delay reveals a "fundamental weakness" in Australia's waste policies.

"We've had a solar panel industry for years which is an important environmental initiative, and it should have been incumbent on government to act in concert with the growth of the industry so we have an environmentally responsible end-of-life strategy," he said.

Mr Angel said photovoltaic panels contain hazardous substances and "when we are sending hundreds of thousands of e-waste items to landfill we are also creating a pollution problem".

"It's a systemic problem that [applies to] a whole range of products", he said, saying schemes were badly needed for paint, batteries, floor coverings, commercial furniture and many types of electronic waste.



The Australian Council of Recycling says a national program to recycle computers and televisions has been successful and solar panels and batteries should be subject to similar schemes.

DOMINIC O'BRIEN

Photovoltaic panels are predominantly made from glass, polymer and aluminium, but may also contain potentially hazardous materials such as lead, copper and zinc.

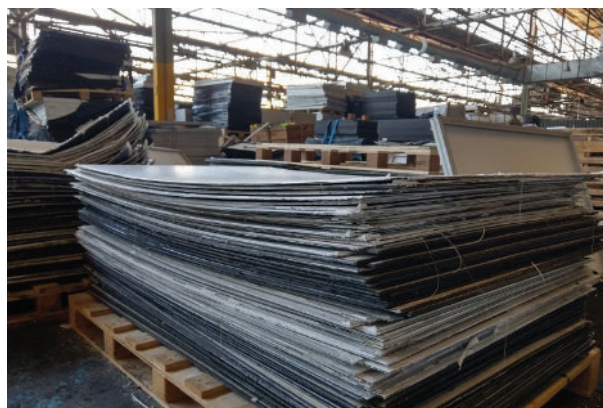
Australian Council of Recycling chief executive Peter Schmigel attributed delays in product stewardship schemes to both "bureaucratic malaise" and unfounded concern about cost.

The national television and computer recycling scheme, which since 2011 has required manufacturers and importers to participate in industry-funded collection and recycling, showed that regulatory measures can work, he said.

"Recovery rates have been out of sight since the beginning of the scheme, nobody has said anything at all about there being an inbuilt recycling cost. It generates jobs, it generates environmental outcomes and yet for some reason we have policymakers who are hesitant about [establishing similar schemes] for solar PVs and batteries," he said.

Victoria will ban electronic waste in landfill from July 2019, including all parts of a photovoltaic system, mirroring schemes imposed in Europe.

Sustainability Victoria is also leading a project examining end-of-life management options for photovoltaic systems, which may progress to a national program. The issue is particularly pertinent in Victoria where a new \$1.3 billion program is expected to install solar power on 700,000 homes.



Solar panel components waiting for recycling at a Reclaim PV warehouse.

Sustainability Victoria resource recovery director Matt Genever said there was strong support from industry, government and consumers for a national approach to photovoltaic product stewardship. Final options are due to be presented to environment ministers in mid-2019.

He rejected suggestions that plans were progressing too slowly.

"The analysis we've done in Victoria...shows that it's in 2025 that we see a real ramp up in the waste being generated out of photovoltaic panels. I certainly don't think we've missed the boat," he said.

A report by the International Energy Agency and the International Renewable Energy Agency in 2016 found that recoverable materials from photovoltaic panel waste had a potential value of nearly \$US15 billion by 2050.

Reclaim PV director Clive Fleming, whose business is believed to be the only dedicated photovoltaic recycler in Australia, said it recycles 90 per cent of materials in a panel. The company has been lobbying for state bans on solar panels entering landfill.

The NSW Environment Protection Authority said it has commissioned research to better understand how e-waste, including solar panels, was managed. The panels can be dumped in NSW landfill, however given their life span they were "not a common item in the waste stream", it said.

The Queensland government is developing an end-of-life scheme for batteries used in solar systems and other appliances.

A federal review of the Product Stewardship Act was expected to be completed last year, but the Department of the Environment and Energy is yet to present a report to the government.

Mr Genever hoped the review would result in a broader range of products being subject to stewardship programs and take steps to ensure voluntary schemes were effective.

Both the Smart Energy Council and the Clean Energy Council, which represent solar industry operators, said a well-designed product stewardship scheme was important and should be developed through cooperation between industry, governments and recyclers.