

ADVERTISING FEATURE

# Recycling



# waste management

A circular economy is in Australia's sights, writes Anders Furze.

On a Thursday morning in Brisbane last month, Australia's federal, state and territory environment ministers met for the first time in more than a year. Among three commitments agreed to at the meeting, the ministers declared they would work with the private sector to achieve a circular economy by 2030.

"For decades the federal government was absent from the recycling space; we left it to the states," says Garth Lamb, chief development officer at Re.Group, operator of one of the largest networks of recycling facilities across Australia. But he says that started to

change under the previous government and has continued since.

"We're now seeing a much better co-operation ... This co-ordination across the various levels of government and industry is absolutely critical if we want to make Australia a better place in terms of the circular economy."

Industry groups including the Australian Council of Recycling (ACOR) have also welcomed the top-level commitment to a circular economy. "Innovation is only possible and sustainable with strong markets for

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# Edging closer to completing the circle

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recycled products," says ACOR CEO Suzanne Toumbourou of the ministers' announcement.

"With the goal of a circular economy by 2030, governments and industry must work collaboratively across the supply chain to design and build for adaptability, disassembly, deconstruction and recovery."

In contrast with the traditional linear model, in which products are consumed and then become waste to be disposed, a circular economy treats waste as a reusable resource. A successful transition to a circular economy requires more than just recyclers picking up the slack, Lamb says.

"Recyclers are very impressive ... but we're not magicians. We can't magically take low-value, non-recyclable items and put them back into the circular economy. We've got to think about this as a total systems approach."

That means product designers re-thinking how they design consumer products and packaging, for instance, to make them more easily recyclable.

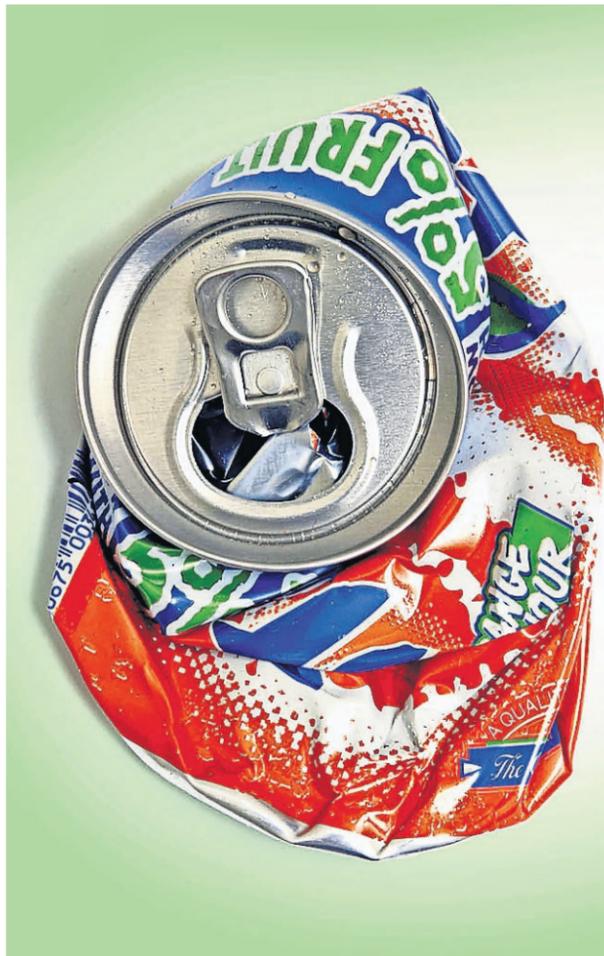
Australia has set 2025 national packaging targets to help achieve this goal. By 2025, the targets are for:

- 100 per cent of packaging to be reusable, recyclable or compostable
- 70 per cent of plastic packaging to be recycled or composted (a figure that currently sits at 16 per cent)
- Problematic and unnecessary single-use plastics to be phased out; and
- Packaging to include 50 per cent average recycled content (revised up from 30 per cent in 2020).

"It is crucial that recovered plastic is treated as a resource and seen as a critical way to 'close the loop'," noted Brooke Donnelly, the former CEO of the Australian Packaging Covenant Organisation (APCO), earlier this year. "No materials are truly recycled until they are used again, so it is vital that we expand our end markets for recovered plastic to ensure it goes back into the economy."

## TUMULTUOUS TIMES

It has been a bumpy few years for Australia's recycling and waste management industry following China's waste import ban and Australia's subsequent restrictions on the export of waste including glass, plastic and tyres. The export of paper



## By the numbers: Australia's recycling and waste management

Australia's waste and resource recovery industry contributes **\$4.8 billion** directly to the economy.

It supports an estimated **106,500 jobs** - 36,000 directly and 70,500 indirectly.

The waste export bans and other government recycling initiatives are expected to generate an additional **1900 jobs**, **\$3.6 billion** in turnover and **\$1.5 billion** to GDP over the next 20 years.

**1.98 billion** - the number of containers returned through the NSW container deposit scheme from October 2021 to September 2022.

Source: National Waste and Recycling Industry Council

"We're getting closer to where we want to be," says recycling executive Garth Lamb.

and cardboard will be restricted from July 1, 2024.

The waste export restrictions were designed to both stop the dumping of recyclable materials overseas and build the capacity of a domestic recycling industry. But almost two years on from their first

implementation, how is the local industry faring?

"The waste export bans were a really positive step that gave the industry the impetus to really focus on the domestic market," says Re.Group's Garth Lamb. "That said, there's a time lag between the focus and delivering all the solution.

## Solar panels an emerging waste problem

When Anthony Vippond wanted to recycle some old panels, he stumbled upon a problem that will only grow in coming years: figuring out what to do with obsolete panels and other infrastructure.

Because a solar panel's average lifespan is approximately 21 years, it's estimated that 100,000 tonnes of solar panels will enter Australia's waste stream by 2035, according to figures compiled by Sustainability Victoria.

"It's starting to happen quite a lot," says Vippond, CEO of Lotus Energy. "Households are having their systems decommissioned and installing a new system for whatever reason, and the old system

gets left in storage at the house because the installers don't know what to do with it."

The company decided to recycle the material themselves, investing in a new recycling system for processing solar infrastructure. The result is the circular economy in action: elements such as the glass get processed into a powder used to construct tiles, which are then used in new solar panels.

"We managed to reach quite a high recovery rate early on, and we're now at a 97 per cent recovery. We've run further trials to utilise that last 3 per cent which have been successful, so we'll be at 100 per cent by the end of Q1 or Q2 next year."

[But] we're in a space now where people have made investment decisions, particularly in the plastics space. There's been a lot of new investment and commitments around doing more to value-add to materials, so that we can keep them in the domestic economy, rather than sending them back to other countries."

Lamb identifies plastics as having a "very bright future", in particular. "The building blocks are there and I think that in 12 months' time, we'll have put in place everything that's on the drawing board. A big part of the solution will be in place."

Managing the paper and cardboard waste stream is proving to be more of a challenge. From July 2024, only paper and cardboard that is processed to specific requirements will be allowed to be sent offshore.

"We import lots of things into Australia in cardboard boxes and the maths just doesn't work," Lamb says. "There's got to be some ability for that material to go back into global markets. Getting the right settings [is crucial]. How do we achieve the intent of the export bans, which is to avoid sending low-quality crap overseas, while improving the quality of what we do, and still take a sensible approach? If we put in a ban and at the end of the day just have to send it to a local landfill, that's a terrible outcome for materials that have a higher purpose."

## INNOVATION IS CRUCIAL

To help accelerate the transition to a circular economy, a new breed of locally grown science and technology companies is emerging in the recycling and waste management arena. Start-up Samsara Eco, for example, has developed a technology alongside the Australian National University that breaks down plastic waste into its original building blocks, called monomers. The monomers can then be reused then broken down again in an infinite loop. Meanwhile, waste management company Goterra uses insects to process food waste, housed in modular units that can easily be inserted into existing waste management infrastructure.

"We've talked about this theory of the circular economy for many years, but there's no doubt the last couple of years have seen progress," Lamb says. "We're getting closer to where we want to be."

# NSW, Victoria clamping down on plastic menace

## Law changes are afoot in Australia's biggest states to reduce plastic waste.

Used by sailors for centuries, Manly Cove is one of the first beach spots for ferry passengers coming in from Sydney Harbour. But the iconic bay is known for another reason: it's one of Australia's worst beaches for microplastic pollution.

Tiny plastic particles are a hard-to-solve problem you can't see, but they can no longer be ignored. From November 1, a range of single-use plastics will be banned in NSW in a bid to curb pollution. Victoria follows suit from February.

Plastic straws, stirrers, cutlery, plates, bowls and cotton buds, polystyrene food ware and beauty products containing plastic microbeads are among the items barred. NSW already banned lightweight single-use plastic bags in June.

Plastic can take thousands of years to decompose. Over time, it breaks into smaller pieces that can kill or injure wildlife if ingested, and can enter the human food chain.

Manly Cove is among Australia's worst beaches for such pollution, with Australian Microplastic Assessment Project data showing more than 850 pieces of microplastic per square metre.

"This is exactly why we must end our reliance on single-use plastic, and why the NSW bans are critical for changing behaviour and improving the state of our environment for the benefit of biodiversity and future generations," says NSW Environment Minister James Griffin.

The bans will stop almost 2.7 billion items of plastic litter from entering the environment over the next 20 years, the government predicts. From November 1, 2024, it will also be an offence for NSW businesses to supply paper plates and bowls with plastic lining.

Major retailers have flagged a voluntary phase-out of heavyweight bags using virgin plastic over the next two to three years, but NSW is awaiting the results of that before deciding on any ban.

NSW produces about 800,000 tonnes of plastic waste every year, and about 10 per cent is recycled, but authorities say that figure should be much higher.

The state is aiming to triple its plastics recycling rate by 2030 in its move towards a circular economy.

The state is also ensuring all NSW councils provide a food and organics (FOGO) bin to all households by 2030. Businesses that produce the highest volumes of food waste, including big supermarkets and restaurants, will also have separate FOGO collections by 2025.

This will help the state achieve its target of halving food waste in landfill and achieving net zero emissions from organics in landfill by 2030.

In Victoria, the ban on single-use

plastics is effective from February 1. Other waste, such as paper or cardboard plates lined with plastic, are exempted from the ban until November, 2024.

Victoria is also introducing a container deposit scheme from 2023, which will provide a 10 cent refund for every eligible can, carton and bottle returned.

Environment Minister Lily D'Ambrosio says the scheme will be easy to use and accessible.

"[It] will deliver more and better recycling, less waste, reduce litter by up to half, [create] hundreds of new jobs and economic opportunities and a cleaner, greener state," she says.

It complements Victoria's new four bin system, giving households a separate glass recycling bin by 2027 and food organics and garden organics bin by 2030. From 2025, businesses will also be required to sort their waste under the state's bid to help divert 80 per cent of waste from landfill by 2030.

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