

The Future of Plastics

Underpinning Australia's transition to a new plastics economy

The Mission

To deliver excellence in research and development, underpinned by strong industry linkages, driving innovation, commercialisation, and education in the new plastics economy while also deepening our understanding of plastics flows and impacts and current barriers to transitioning.



The Challenge

Plastics are important and ubiquitous materials in our economy and our daily lives. They offer outstanding performance at low cost, often with associated environmental or health benefits. However, this utility currently comes at a cost:

- Half of all plastics produced are designed to be used only once – and then thrown away
- As a result, around 103 kg per person of plastic waste is generated in Australia in a year (or 2.5 million tonnes in total)
- Of this, just 12% is recycled with 87% sent to landfill and 1% sent to an energy from waste facility
- Globally, around 8 MT of plastic leak into the ocean each year, and over 75% of rubbish that is removed from Australian beaches is made of plastic
- Asia-Pacific Economic Cooperation estimates that the cost to the tourism, fishing and shipping industries of plastic waste in the ocean was \$1.3bn in that region alone
- Microplastics are now found throughout our environment and in much of the human food chain.

To address this, the new National Waste Action Plan is targeting 80% average resource recovery rate from all waste streams by 2030, and is banning plastic waste export from the second half of 2020. We need to take action to meet this challenge.

Materials	322 MT plastics produced per year	Renewable feedstocks Novel materials
Manufacture		Holistic product designs Less/alternative additives
Supply Chain	58 MT/year plastics in long-term use or reuse	Commercial behaviour Logistics management
Consumption		Consumer behaviour Economic incentives
Disposal	77 MT/year recycled 58 MT/yr incinerated 191 MT/yr in landfill	Intercepting waste End of life management
Ocean Plastics	>8MT/year	Opportunities

Plastic pollution is now widely accepted as a significant environmental issue of global concern. Rethinking and improving the functioning of such a complex value chain requires efforts and greater cooperation by all its key players, from plastics producers to recyclers, retailers and consumers. It also calls for innovation and a shared vision to drive investment in the right direction.

3 Programs

We will take a coordinated and multi-dimensional systems approach to deliver this strategy, by:

- Developing novel business solutions throughout the plastics value chain, including end of life management, new materials design, and strategies for zero waste;
- Understanding public perception and behaviour, and developing effective policies including extended producer responsibility, and;
- Identification and quantification of environmental plastic flows and impacts.

Underpinning all this will be education and outreach activities aimed at assisting Australian industries, governments and the general population with strategies for transitioning to a vibrant and non-polluting plastics economy.



Outcomes

The global recycled plastics market is expected to grow at 7.9% annually over the next decade, and will be worth around \$66.9 billion by 2025. And the direct FTE employment per 10,000 tonnes of waste is estimated at 2.8 for landfill but 9.2 for recycling. This program will deliver:

- New products and markets for plastics producers, converters and waste management companies to tap into this multibillion-dollar opportunity
- At least 1600 FTE new jobs just on the shift from landfilling to recycling
- Commercially sustainable and much more efficient waste management operations
- Much less plastic ending up in landfill and leaking into our environments
- A detailed understanding of the plastics flows and impacts, both within Australia and globally, and
- Strategies for effective policy development and society level changes, helping to drive the emerging circular plastics economy.



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CREATE CHANGE