



HELPING AUSTRALIA CLEAN UP

By Hayley Corbett, Consultant, Clean Energy Finance Corporation

Australia has a growing waste management problem, with millions of tonnes buried in landfill every year. The resulting emissions pose a climate challenge, but the CEFC is helping to turn today's rubbish into tomorrow's energy and recycled goods.

Australians generate around 2.7 tonnes of waste per person each year, including plastics, paper, glass, metals, textiles, masonry, food and other organic materials. This waste costs an estimated \$120 per tonne to send to landfill and is responsible for some two per cent of Australia's emissions. Methane gas, the emission produced by decaying organic waste, is 25 times more potent as a greenhouse gas than carbon dioxide.

According to the Department of the Environment and Energy, waste emissions will hit 11 mega tonnes of carbon dioxide equivalent in 2020, despite a 14 per cent fall on current levels due to waste diversion from landfill, and higher levels of recycling and methane capture.

Australia's waste sector is undergoing a significant transition. With the China National Sword policy enacted in January 2018; the Council of Australian Governments last year agreeing to ban the export of waste plastic, paper, glass and tyres; and state governments tightening landfill regulations, the focus is now on our capacity to generate high-value recycled commodities.

THE AUSTRALIAN RECYCLING INVESTMENT FUND

The Australian Government has prioritised improved recycling with the recently announced \$100-million Australian Recycling Investment Fund (the Fund).

The Fund is designed to encourage increased investment in clean energy technologies that support waste recycling. Under the terms of the Investment Mandate, the Clean Energy Finance Corporation (CEFC) has been directed to invest in recycling projects with a focus on waste plastics, paper, glass and tyres. The Fund will draw on existing CEFC finance, and is also able to access funds in excess of \$100 million in its portfolio, should it be required.

CEFC CEO Ian Learmonth says that investments made under the Fund would help to accelerate Australia's transition to a lower-emissions economy.

'Waste management is an increasingly complex issue in Australia and internationally. The CEFC invests in proven technologies, which turn urban and industrial waste into new energy sources, creating a revenue stream while also reducing landfill gas emissions,' Learmonth says.

'Through the Fund, we're working with project sponsors on a range of innovative solutions to increase the recovery of resources, improve recycling, and increase the amount of waste diverted from landfill.'

The CEFC expects to invest in eligible larger-scale commercial and industrial projects through the Fund, typically requiring \$10 million or more of CEFC debt or equity capital. Smaller-scale projects, from \$10,000 to \$5 million, may be eligible for debt finance through the CEFC's existing specialist asset finance programs.

Projects seeking CEFC finance under the Fund must draw on renewable energy, energy efficiency and low-emissions technologies, and contribute to emissions reduction. They must also be commercial, reflecting the CEFC's requirement to deliver a positive return for taxpayers across the portfolio.

OTHER WEAPONS IN THE WAR AGAINST WASTE

Improved recycling is just one weapon in the fight to reduce Australia's waste levels. In recent years, the CEFC has supported a range of technologies to reduce emissions from landfill.

In December, the CEFC committed up to \$57.5 million towards Australia's second large-scale energy-from-waste (EfW) plant being built at East Rockingham in Western Australia. The \$511-million East Rockingham Resource Recovery Facility (ERRRF) will divert waste from landfill, recover materials, and generate renewable energy to support Western Australia's electricity network.

The facility is the first of its kind in Australia to use 'waste arising' contracts, which means councils only pay for the waste collected and can continue to pursue waste reduction targets. When complete, it will process about 300,000 tonnes of waste per year and generate 29 megawatts of renewable electricity. Around 72,000 tonnes of bottom ash will also be recovered every year and processed for use in road bases and other construction materials.



The ERRRF is the second EfW project financed by the CEFC. Just seven kilometres away, in neighbouring Kwinana, Australia's first large-scale thermal EfW facility is under construction after securing \$90 million in debt finance from the CEFC in 2018.

The CEFC also supported ResourceCo's Processed Engineered Fuel (PEF) plant at Wetherill Park in Western Sydney, which transforms dry commercial and industrial waste into an alternative renewable fuel source. The plant is licensed to process 250,000 tonnes of waste per year, producing PEF and recovering metal, clean timber and inert materials. The CEFC committed \$10 million in debt finance to support the plant, which is expected to abate more than four million tonnes of carbon emissions over its lifetime.

Another focus is finding a second life for organic kerbside waste. Australia generates about 14.2 million tonnes, 581 kilograms per capita, of non-hazardous organic waste per year, and the economic cost of food wastage in Australia is estimated at around \$20 billion per year.

The CEFC has committed up to \$38 million in a project seeking to convert around 12,000 truckloads of household garden and food waste from council green waste collection bins to up to 50,000 tonnes of high-grade compost each year.

Melbourne's South Eastern Organics Processing Facility will treat organic waste produced by eight Melbourne councils and is expected to abate more than 65,000 tonnes of carbon emissions annually. An aerobic composting and maturation plant will produce compost, which can be used in local parks and gardens, as well as in horticulture, landscaping and agriculture, to substantially reduce landfill and emissions.

ABIDING BY THE PRINCIPLES OF THE CIRCULAR ECONOMY

CEFC Acting Head of Waste and Bioenergy Mac Irvine says that an important consideration for investments made under the Fund is that they align with the principles of the circular economy established in the National Waste Policy:

- **Avoid waste** – prioritise waste avoidance; encourage efficient use; re-use and repair;

and design products that are made to last, and we can more easily recover materials.

- **Improve resource recovery** – improve material collection systems and processes for recycling; and improve the quality of the recycled material we produce.
- **Increase the use of recycled material** – and build demand and markets for recycled products.
- **Better manage waste material flows** – to benefit human health, the environment and the economy.
- **Improve information** – to support innovation, guide investment and enable informed consumer decisions.

'CEFC waste-related investments are focusing on proven clean energy technologies to re-use, recycle or reprocess waste as compost, alternative fuels and recovering energy and other materials,' Irvine says.

'We support the recommendations of the international waste hierarchy and focus on projects that seek to make a material reduction to Australia's waste-related emissions, while achieving a commercial return on our investment.'