



Australian Government



Organic waste and the path to net zero emissions

How can Australia turn household food and garden waste into an opportunity to push towards our target of net zero emissions by 2050? The CEFC is helping municipal councils use proven technology and harness the principles of a circular economy to recover valuable resources while avoiding landfill emissions.



“

Within two short years we have shown we can treat more than 100,000 tonnes of organic materials per annum to produce high quality compost that has found a ready market and is helping put vital nutrients back into soils.”

Joaquin Cuevas
Director, Sacyr Environment Australia

Organic waste gets second life as green compost

Melbourne’s South Eastern Organics Processing Facility is taking truckloads of household garden and food waste and turning it into high-grade compost – giving this waste a useful second life while making substantial cuts to landfill emissions.

Built and operated by leading international waste management company Sacyr Group, the facility benefited from \$38 million in CEFC debt finance.

The Dandenong plant uses some of the most advanced technology available for the treatment of organic waste, with the entire composting process carried out inside the fully enclosed treatment hangar.

The \$65 million state-of-the-art Melbourne plant processes food organics and garden organics – known as FOGO – that has been collected from councils and commercial operators. The finished compost is sold to landscape and garden supply companies, farms and agricultural producers.

FOGO makes up 55 per cent of the waste generated by average Australian households. When sent to landfill, FOGO produces methane, a greenhouse gas estimated to be 28 times more potent than carbon dioxide.

Organic waste gets greener future

~100,000t
green waste processed

~40,000t
organic compost produced

~80,000t
CO₂-e abatement

Annual output in first two years

Recycling our way to lower emissions

The Australian market for recycling and resource recovery is undergoing a transformation, with landfill levies and export bans providing incentives for change.

The CEFC Investment Outlook, *Energising resource recovery: the Australian opportunity* notes that there is a general trend towards implementing levies and levy increases that provides greater opportunity for recycling and resource recovery facilities as well as the development of other end markets for waste materials.

To encourage greater use of recycling and resource recovery facilities, gate fees need to be low enough to be more financially attractive than sending waste to landfill. Diverting organic material through composting, recycling or anaerobic digestion facilities could reduce landfill emissions by 18 per cent.

These circular solutions also provide the potential to return valuable nutrients such as nitrogen, potassium and phosphorous to soils, to aid plant growth. The microorganisms in compost promote soil microbial health and diversity and boost organic soil carbon.

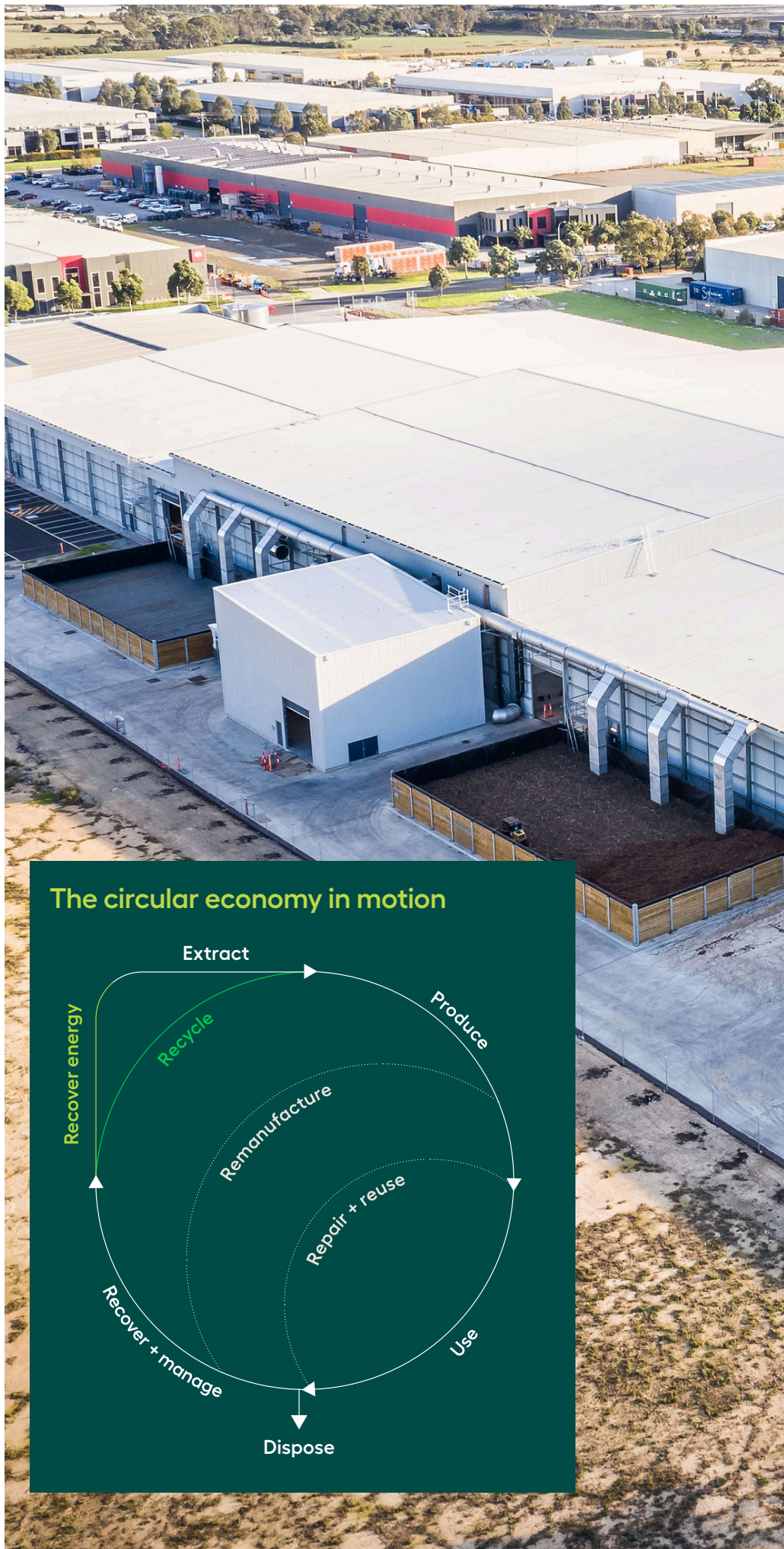
The circular economy model creates a closed loop of material and energy cycles. The model aims to allow organic material to re-enter and regenerate the environment safely while other materials are circulated for as long as possible through repair and reuse.

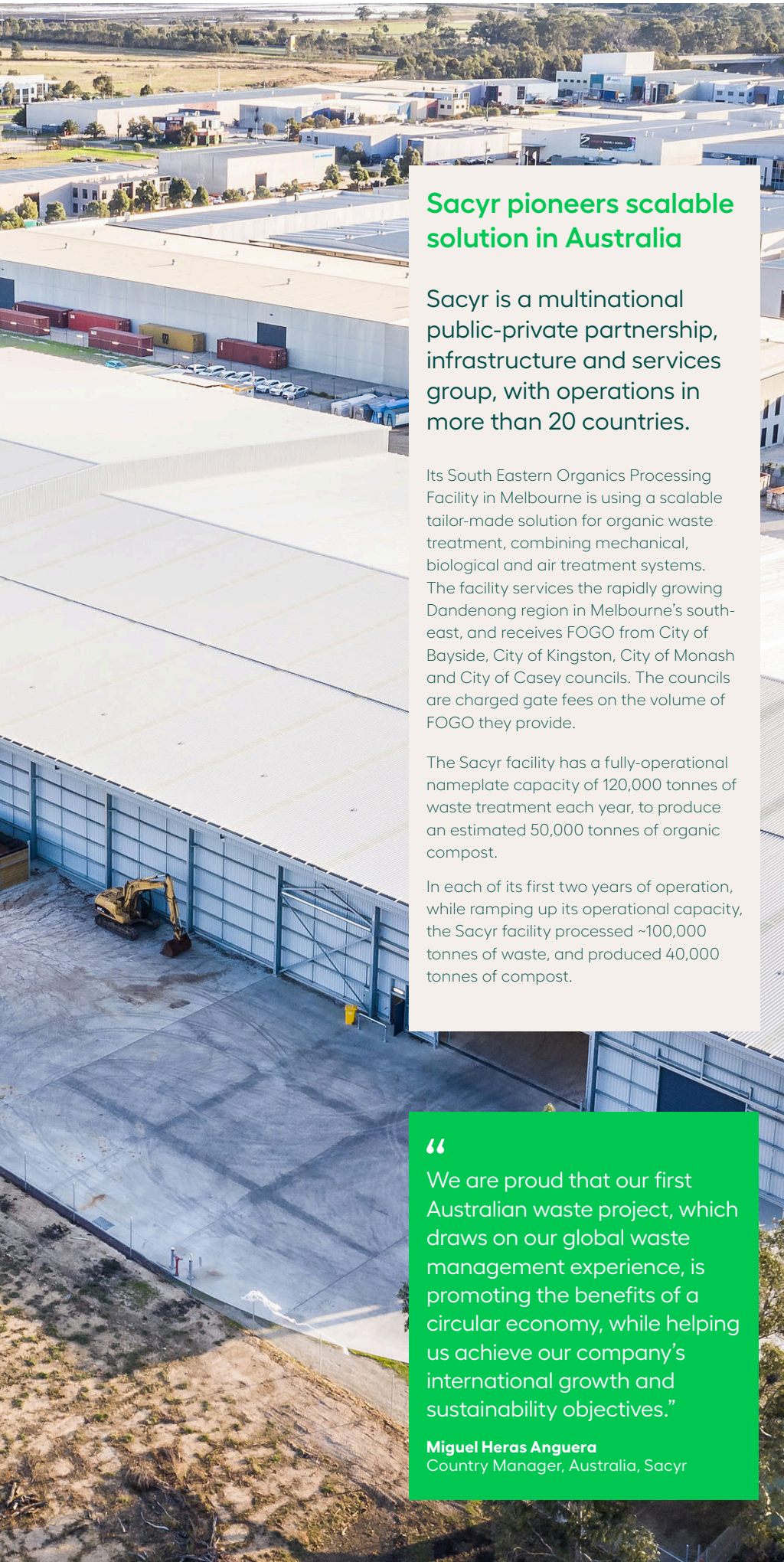
PwC, in its March 2021 report *Building a more circular Australia*, estimates that by adopting a circular economy model, Australia could generate \$1.86 trillion in direct economic benefits over 20 years and abate 165 million tCO₂-e by 2040.

Only 22%
of Australians are familiar
with the concept of the
circular economy

Cleanaway Recycling Behaviours
Report, April 2022

CEFC Investment Insights





Sacyr pioneers scalable solution in Australia

Sacyr is a multinational public-private partnership, infrastructure and services group, with operations in more than 20 countries.

Its South Eastern Organics Processing Facility in Melbourne is using a scalable tailor-made solution for organic waste treatment, combining mechanical, biological and air treatment systems. The facility services the rapidly growing Dandenong region in Melbourne's south-east, and receives FOGO from City of Bayside, City of Kingston, City of Monash and City of Casey councils. The councils are charged gate fees on the volume of FOGO they provide.

The Sacyr facility has a fully-operational nameplate capacity of 120,000 tonnes of waste treatment each year, to produce an estimated 50,000 tonnes of organic compost.

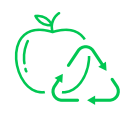
In each of its first two years of operation, while ramping up its operational capacity, the Sacyr facility processed ~100,000 tonnes of waste, and produced 40,000 tonnes of compost.

“ We are proud that our first Australian waste project, which draws on our global waste management experience, is promoting the benefits of a circular economy, while helping us achieve our company’s international growth and sustainability objectives.”

Miguel Heras Anguera
Country Manager, Australia, Sacyr

Experience improves efficiency

Sacyr has noted several factors contributing to efficient operations:



About 95 per cent of organic materials processed at the facility is sourced from councils. The remainder is food organics sourced from commercial operators including supermarkets, fruit and vegetable markets, cafés and restaurants. The food organics have proved a critical addition, helping boost the nutrient levels and the quality of compost produced.



Nutrient-rich water is extracted from the organic feedstock as part of the composting process. The facility has harnessed this water and reused it in its operations to assist with temperature control. This circular economy solution means the facility is meeting the majority of its own water requirements.



Educational tours of the facility are increasing understanding about acceptable organic materials. Through promoting better awareness of its operations, the facility expects to receive less plastic, metal and other unsuitable material from council collection services. It also aims to better educate feedstock suppliers about oversized materials that need further processing before they can be composted.



Industry first financing solution

The CEFC provided an industry first debt financing structure for the Melbourne facility that played a key role in delivery of the large-scale development. While in-vessel composting plants are well established overseas, the Sacyr Group found a limited banking appetite for this first-of-its-kind Australian project.

The CEFC financing model provided councils with access to a project financing structure that has rarely been leveraged across local government, with the innovative approach enabling the large-scale project to proceed based on the revenue expected from gate fees. The gate fees supply the majority of the facility's revenue stream.

Finance highlights

Key features of the CEFC finance:

1

Offered a finance model for groups of councils considering investing in substantial waste management infrastructure to reduce landfill waste

2

Demonstrated the bankability of Waste Supply Agreement-based projects on a project finance basis in Australia

3

Helped develop advanced waste industry skills in Australia and assisted in developing the requisite supply chain to deliver these types of projects

4

Facilitated significant estimated emissions reduction over the facility's lifetime.



Australian Recycling Investment Fund

CEFC investment commitments in FOGO recycling complement its work through the \$100 million Australian Recycling Investment Fund.

Through the Fund, which draws on existing CEFC finance, the CEFC has a particular focus on large-scale recycling of waste plastics, paper, glass and tyres. The CEFC works with companies to turn urban and industrial waste into new energy sources and valuable products, creating important revenue streams.

The Australian Government 2019 National Waste Policy Action Plan set a 2030 target to halve the organic materials going to landfill. The target equates to a reduction of 2.7 million tonnes of organic materials every year. To meet the target, councils across Australia are stepping up FOGO collection services and employing best-in-class technologies to recover valuable organic materials for reuse.

Reduce, reuse, recycle

The CEFC supports the 'reduce, reuse, recycle' recommendations of the international waste hierarchy and focuses on projects that seek to make a material reduction to Australia's waste-related emissions.

Effective waste management can:

- 1 Deliver positive renewable energy outcomes
- 2 Improve the security of energy supply
- 3 Increase the diversion of waste from landfill.



CEFC finance for better waste outcomes

Australia’s recycling and resource recovery sector is undergoing considerable change which requires significant new investment in infrastructure and equipment to take advantage of opportunities measured in economic, employment and emissions benefits. The CEFC, as part of its mission to accelerate investment in Australia’s transition to net zero emissions, is investing across the sector, supporting the recommendations of the international waste hierarchy and focusing on projects that seek to make material reductions in Australia’s waste-related emissions.

About the CEFC

The CEFC has a unique mission to accelerate investment in Australia’s transition to net zero emissions. We invest to lead the market, operating with commercial rigour to address some of Australia’s toughest emissions challenges. We’re working with our co-investors across renewable energy generation and energy storage, as well as agriculture, infrastructure, property, transport and waste. Through the Advancing Hydrogen Fund, we’re supporting the growth of a clean, innovative, safe and competitive hydrogen industry. And as Australia’s largest dedicated cleantech investor, we continue to back cleantech entrepreneurs through the Clean Energy Innovation Fund. With \$10 billion to invest on behalf of the Australian Government, we work to deliver a positive return for taxpayers across our portfolio.



Giving PET bottles a second life

\$16.5m

CEFC commitment

The Circular Plastics Australia polyethylene terephthalate recycling facility in Albury, NSW, will recycle the equivalent of one billion plastic bottles a year, producing more than 20,000 tonnes of new bottles and food packaging.



Lifting recycling capacity

\$30m

CEFC commitment

Australia’s Visy Industries is increasing its capacity to recycle waste materials by 10 per cent with a pipeline of projects to improve the overall energy efficiency and renewable energy use of its large-scale Australian manufacturing operations.



Turning waste into green power

\$2.2m

CEFC commitment

Major Australian garden products supplier Richgro meets all its power needs via a 2 MW anaerobic digestion plant that processes more than 35,000 tonnes of commercial and industrial organic waste each year. Surplus energy is sold through the Western Power grid.



Sustainable waste management focus

\$90m

CEFC commitment

Cleanaway is accelerating its sustainable waste management activities with an array of projects aimed at reducing the amount of waste going to landfill, from recycling to resource recovery, alongside an innovative consumer recycling education program, Greenius.