

Energy recovery fact sheet

Example energy recovery facility in Spittelau, a suburb in the centre of Vienna, Austria

Building a new, modern – cleaner – energy system for Australia means thinking differently about how we produce electricity.

Today we make power from wind and the sun, and can even store that energy in batteries for use on windless, cloudy days. EnergyAustralia is also investigating new technology that can unlock the energy in ordinary, non-recyclable household waste.

This fact sheet provides an overview of EnergyAustralia's \$160 million energy recovery project and its potential to provide reliable power for thousands of homes while avoiding tonnes of household waste going to landfill.

Energy recovery at Mt Piper

As an owner of big, coal-fired power stations we have a responsibility to promote and lead the development of cleaner forms of energy.

EnergyAustralia and Re.Group are developing a project to augment the 1400-megawatt (MW) Mt Piper power station near Lithgow in New South Wales with lower-emissions generation.

The project, an Australian first, involves using non-recyclable plastics, linen and cardboard, known as refuse derived fuel (RDF), in a specifically-designed boiler to create steam.

The steam would drive existing large turbines at the power station, generating more electricity for use in homes and businesses across New South Wales, without burning additional coal.

Already widely used in the United States, Europe and the United Kingdom, energy recovery technology has the potential to help address two of the big challenges we face in Australia: minimising waste to landfill and generating energy more sustainably.

Refuse derived fuel

Our project won't use unprocessed municipal waste, like food scraps, organic materials, metals or general rubbish.

To work properly, RDF has to be carefully selected and engineered. RDF is made from material we put into the red bins at home but which ultimately can't be recycled and would otherwise go to landfill.

RDF contains around half to two thirds the energy content of coal.

Transporting the RDF to the Mt Piper power station would be done by road, adding less than one per cent to the region's traffic volume.

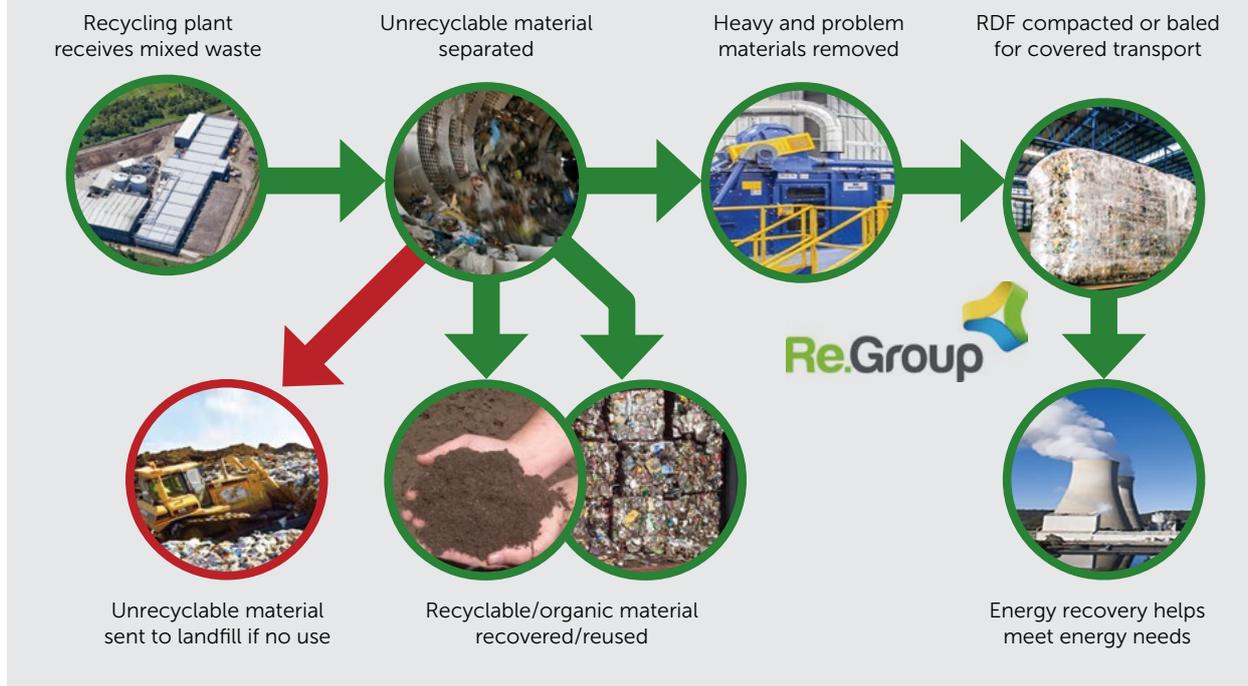
Benefits

The work we've done to date indicates energy recovery has potential benefits including:

- Allowing the Mt Piper power station to generate almost an additional 30 MW of electricity, enough to meet the needs of around 40,000 average homes in New South Wales, without burning more coal.
- Reducing greenhouse gas emissions by the equivalent of more than 200,000 tonnes of carbon dioxide per year.
- Providing around 300 local direct and indirect jobs during 18-24 months of construction and around 16 ongoing operational roles.
- Recycling some 200,000 tonnes of material a year that would otherwise go to landfill.

The RDF production process

New South Wales Environment Protection Authority-licensed recycling facilities receive waste and separate recyclable, organic and unrecyclable material (plastics, dirty paper, linen) using machine sorters.



No incineration

Waste incineration was banned in New South Wales almost two decades ago.

Our project will meet the very stringent requirements of the New South Wales *Energy from Waste* policy. It sets out minimum requirements for the amount of energy recovered from RDF and tight air emissions standards.

Environmental impacts

Any project we do must be environmentally and socially acceptable.

It's normal to have questions about new projects, especially when it's an Australian first. That's good because it helps us understand what's important to the community as we develop plans and assess project impacts.

We're doing a full environmental assessment which will cover issues important to the community, such as air quality and odour, waste management, potential impacts to flora and fauna, and traffic and transportation.

We'll study the experience of energy recovery in Europe, the United States and the United Kingdom,

where the technology is already part of the energy mix and has a track record of generating electricity safely and reliably, quite often in the middle of cities and very close to houses.

It's early days but we've been really encouraged by the interest the community has shown in the project.

Next steps

The reality is big projects can't proceed unless they have broad community support.

A core part of the assessment process involves the community having its say. This work will help identify how potential impacts may be minimised – or avoided – and how benefits might be shared.

We plan to submit a full environmental impact statement (EIS) in 2019 detailing the proposal, the feedback we receive and the project's potential impacts.

We're aiming to make a final investment decision in 2020, with first power as soon as 2022.

We're optimistic energy recovery can form part of a new, modern energy system as big coal plants are progressively retired, alongside wind, solar, battery storage, demand response and pumped hydro technology.