# Frequently Asked Questions

**What is energy-from-waste?**

Energy-from-waste is a proven, environmentally friendly way of diverting waste from landfill, creating electricity from the process.

Waste is thermally treated with resultant energy recovered to create heat. The heat energy is converted to steam energy which powers a turbine and generates electricity.

Energy-from-waste is successfully used around the world with more than 450 facilities operating in Europe, including in cities like Copenhagen and Paris.

## What happens to the waste?

When waste arrives at the facility, it is first inspected for compliance with the environmental permit and suitability for combustion in the plant then mixed by a crane to ensure a homogeneous waste supply. The waste then enters a boiler for combustion and resultant energy is recovered to create heat. The heat energy is converted to steam energy which powers a turbine and generates electricity.

Remnant ash produced during this process is then treated, with the metals removed for recycling and re-use. Any emissions are also treated to remove pollutants which are stored for disposal or re-use. For more information, please read our Emissions Fact Sheet.

**How is energy-from-waste good for the environment?**

The energy-from-waste process reduces carbon emissions in three ways:

1) **Reduces landfill:** Less landfill means less greenhouse gases, including methane, being released into the atmosphere from decomposing waste.
2) **Generates green energy**: Each tonne of waste produces about 700 kilowatts-per-hour of electricity which is exported to the power grid. This means less electricity needs to be produced by fossil fuel sources like coal.
3) **Opportunity to recycle:** Metal scrap in the waste is reclaimed and reused in the steel industry, and the ash created as a by-product of the combustion process can be used in construction.

**What emissions are produced in the process?**

More than 99.9 per cent of emissions are components of normal air like steam, oxygen, nitrogen and carbon dioxide.

In our Emissions Fact Sheet we explain the emissions treatment process and monitoring measures taken to ensure emissions remain low, and exactly what those emissions are comprised of.

## What materials are released into the air as a result of the energy-from-waste conversion process? Are any of these toxic?

More than 99.9 per cent of our emissions are components of normal area like steam, oxygen, nitrogen and carbon dioxide.

For the very small remainder of emissions, those compounds go through a sophisticated treatment processes which ensures emissions remain well below all relevant standards.

To find out more, please read our Emissions Fact Sheet.

**What ash is produced during this process?**

There are two types of ash that result from the thermal treatment process:

- Bottom ash, which is solid residue that is discharged from the bottom of the furnace, and
- APCr (Air Pollution Control residue), which is created when the fly ash particles (from the furnace) are treated with lime and activated carbon and are captured in the purification process.

### What happens to the ash?

Bottom ash produced during the energy-from-waste process is treated, metals are removed for recycling and the remaining residue is re-used for inert road and construction materials.

Avertas are exploring ways to turn APCr into a product that can be used in cement product which would mean it can be recycled.

Bottom ash is commonly used in the UK for road aggregate, and APCr can be used in construction.

#### How much bottom ash will there be?

Bottom ash weighs about 15 and 20 per cent of the waste prior to thermal treatment. Our goal is to process this bottom ash to enable it to be used in construction.

## Community engagement and information

#### How is Avertas Energy engaging with the local community?

Community engagement is an important part of Avertas Energy's operations as our catchment extends across a wide area of Perth. We are working to provide the community with timely, accurate and up-to-date information about our project through our website, downloadable fact sheets, and social media channels.

We engage with Local Government, participate at events such as the Communities and Industries Forums organised by the Kwinana Industries Council, and once we are operational, our plant will have dedicated community engagement facilities open to schools and members of public who are interested in learning more about our facility.

#### Is there a community group that has input into Avertas Energy?

Our community consultation is driven through Local Governments, due to the big area from which we will draw waste to use in our process.

#### Once operational, will Avertas Energy run the facility?

Avertas Energy is the developer and owner of the energy-from-waste facility in Kwinana. We have a 25-year agreement with an experienced waste management company, Veolia, to operate and maintain the plant once operational. Veolia has extensive experience in designing, developing, building and operating energy, water, waste recycling and resource recovery facilities around the world. Veolia's current global portfolio include 62 energy from waste plants.

#### Energy-from-waste and the new three-bins system:

The three-bin system is a Western Australia State Government plan for councils to implement. Our facility is designed to treat residual waste and has flexibility to accommodate the anticipated changes in the waste composition that is likely to occur as a result of the transition to the three-bin system.

Advances in recycling and compostable waste are happening all the time – and we know recycling is higher in most countries where energy-from-waste is a well-established technology.

#### What happens if the councils don't have enough waste?

Avertas Energy is anticipated to treat 25 per cent of Perth's current waste which we expect to keep us pretty busy once operational. The plant has the flexibility to operate at an annual throughput from 280,000 tonnes up to permit capacity of 400,000 tonnes.

#### Will you process any recyclable or compostable waste?

Energy-from-waste is primarily targeted to process non-recyclable or compostable waste. This includes things like soft plastics, nappies, soiled pizza boxes, and wastepaper like napkins.

Of course, our fuel source is dependent on what residents put in their residual waste bins, and we support people taking a reduce-reuse-recycle approach to waste.