

Building on the success of the existing precinct at Woodlawn, the new Advanced Energy Recovery Centre will be a major investment for regional NSW, creating hundreds of jobs and driving economic growth in the area.



**\$600M investment** in regional NSW and a further **\$2B investment** in lifetime maintenance and employment



300 jobs will be created during construction



40 additional operational roles will be created during operation



The ARC will generate around 30MW of energy - enough to power 40,000 homes - per year, equivalent to power Goulburn and two more similarly sized towns

Up to **380,000 tonnes** of waste will be diverted from landfill each year, enough to fill 172 Olympic swimming pools

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# Transforming waste into valuable resources

Where we cannot first avoid, reuse or recycle waste, the next most sustainable way to minimise environmental impact is to recover energy. Recovering energy from waste extracts value from non-recyclable material, and is the way forward in Australia if we want to lower carbon emissions and reduce the need to landfill.



- Meta - Grit

While Australians get better at reducing, reusing and recycling, energy recovery is necessary for building a sustainable waste management system.



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# How energy from waste works

Energy from waste technology is proven and is safely being used in developed countries around the world.

It works by drying and combusting residual waste with air in a controlled setting, then uses the heat produced to boil water into steam to drive a turbine coupled to a generator to produce electricity.

> In addition to the energy produced, three other materials are recovered during the process





Waste is dried and combusted at high temperatures



Bottom ash: stones, grit, glass and rocks are collected for use in construction



Heat is generated and steam produced





The steam drives a turbine coupled to a generator to produce electricity



Fine dust: captured and managed within the site



Metals: collected for recycling



Gases are cleaned to the highest standard worldwide and no liquids or odours are discharged.



This is an artist impression of the **proposed Advanced Energy Recovery Centre** upon construction

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# What will it look like?

Veolia will consider the environment in the site design, including its operational features, aesthetics, and surrounding greenspace, which will include much of the natural environment in the landscape.

This is an artist impression of the aerial view **upon** completion. The existing bioreactor landfill (located at the back of the photo) will be rehabilitated over time



#### This is an artist impression of the aerial **view in the future**







# Safe, proven and sustainable technology

#### Veolia is a world-leader in sustainable waste management.

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**Mexico** One in planning

Energy from waste technology is being used safely in many countries, and Veolia operates more than 65 energy recovery facilities globally. Veolia has also been chosen to operate and maintain Australia's first two energy recovery facilities: Kwinana and East Rockingham, both in Perth WA.





**Energy from waste facilities** meet the strict environmental limits set in Europe. Here in Australia, the NSW Environment Protection Authority will set and closely monitor all impacts from the ARC, making sure there are no concerns about health or the environment.

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# Examples of Veolia's energy recovery facilities around the world

#### Urban

Newhaven Energy Recovery Site (UK) 2015 210,000tpa



#### Urban

T Park Sludge Treatment Facility (Hong Kong) 2015 340,000tpa



Staffordshire Energy Recovery Facility (UK) 2014 340,000tpa





#### Urban

Recycling and Energy Recovery Facility, Leeds (UK) 2016 165,000tpa



Rural Lille Recovery Plant (Fr) 2002 338,000tpa

**Rural** Vaux le Pe (Fr) 2003 338,000tpa





#### Vaux le Penil Recovery Plant





There will be **300** jobs created during construction and **40** jobs created during operation. Veolia will recruit locally wherever possible



Veolia will use the surrounding environment and landscape in its designs

# What does it mean for you?



### **Regional jobs**



#### **Investment into the area**

A **\$600M** capital investment into the Goulburn region, supporting economic growth of local business and contractors

#### Attractive design



#### Strict environmental regulations

Strict standards, monitoring and enforcement for all environmental impacts

#### **Securing Mulwaree Trust** initiatives

Developing the future of Woodlawn will mean **certainty** in funds for the Veolia Mulwaree Trust to invest in local initiatives

#### All traffic within existing approvals

We will manage all traffic movements within the existing cap, and based on the approved annual waste input rate



#### **Rehabilitation of** mine site

The new centre will be built on an existing part of the Woodlawn Eco-Precinct, transforming land that is currently contaminated from the old mine site



#### Managing odour

Diverting waste from landfill will allow us to manage and treat the waste inside an enclosed facility, containing and managing odour



## How does the planning process work?

#### The Woodlawn Advanced Energy Recovery Centre is classified as a State Significant Development.

This means there will be strict requirements around the planning process and the Government has asked Veolia to carry out a number of economic, environmental and social impact assessments. Veolia will publish those assessments and consult widely with the public as part of the planning process.



#### **1. Early engagement**

Veolia is seeking initial feedback from community leaders about a potential Advanced Energy Recovery Centre at the Exisiting Woodlawn Eco Precinct





The results of the impacts assessments will be published and a formal consultation will begin. The public will be invited to submit feedback



### 2. Development application

The formal planning process begins when Veolia lodges a development application with the Government

#### 4. Full public consultation

#### **5. Respond to feedback**

The Government will publish all consultation feedback submissions and Veolia will respond

#### **3. Environmental studies**

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The Government has asked Veolia to carry out a number of studies to assess the environmental, social and economic impacts of the project

#### 6. Application assessed

The Government will assess the merits of the application and decide whether the development can go ahead

Veolia will be transparent about all aspects of the planning application and you will be able to see all the studies, so you can decide for yourself what you think about the full proposal.

#### We are here!











Air quality



Odour & history of site



Traffic & roads



Rail movements

# Community feedback so far

Veolia has been engaging with the community who have expressed their interest in the following topics



Energy use & production



EfW policy / waste strategy



Visual impact



Carbon impacts



Jobs, skills & participation



Opportunities for local businesses











Human health impacts



Construction impacts



Circular economy



Water usage & pollution



Investment in regional NSW



Mulwaree Trust and associated



How the tech works & safety



### Having your say

There are feedback forms to complete or you can talk to one of Veolia's team members.

Thank you for taking the time to find out more and have your say.

### Contact us

Further information can be found at veolia.com/anz/TheArc

You can also email TheArc@veolia.com, call 1800 313 096 or write to PO Box 171, Granville, NSW 1830.





### Process Overview





#### **STAGE 1: FUEL RECEPTION AND STORAGE**

- Tipping hall
- 2 Tipping platforms
- 3 Waste bunker
- 4 Overhead grab cranes
- 5 Feed hopper



Waste that can't be recycled is tipped into the waste storage bunker. The waste is lifted by overhead cranes and placed on the feed hopper.



Stage 2

The waste is fed over a moving grate, where it is thermally treated at temperatures above above 850 degrees for two seconds. Ammonia is injected to control oxides of nitrogen.



Above the furnace is a large boiler, **where the** resulting superheated steam is used to drive a turbine coupled to a generator to produce energy. After exiting the turbine, the steam passes through an air cooled condenser to return water to the boiler system.



Hydrated lime and activated carbon are injected to the flue gas to neutralise its acidity and to adsorb pollutants. The flue gas passes through a filter bag house, and particulates within the gases is removed by filter bags. Clean gases are released through the stack. These gases are monitored continuously to ensure environmental standards are met.



Particulates removed by the filtering process will be stabilised and sent to a purposely built encapsulation cell within the site. An electromagnetic separator removes metal from the ash, which is then recycled. Remaining ash will be conveyed to a designated area for maturation and eventually turned into an alternative aggregate material.



# Energyfrom Waste and your health

Any new proposal for an EfW facility requires an assessment of human health risks or impacts. Such assessments typically focus on health impacts from the key emissions – air emissions.

Risks to health are required to be assessed using Australian guidance as detailed by enHealth (2012) and consistent with NSW Chief Scientist (2020) advice.

This requires assessment of exposures to all pollutants from EfW facilities, such as particles, gases, metals and persistent organic pollutants (e.g. dioxins and furans).

### No facility can be approved if a health risk assessment finds unacceptable risks to health.



#### Emission point of measure



**Emission limits are applied to concentrations** in stack before the air leaves the stack



**Calculation of risk =** total intake/acceptable intake **Calculation of incremental lifetime carcinogenic risk =** total intake x risk factor

**Toxicity of each individual chemical** Acceptable intake which is protective of all adverse health effects for all members of the community (including sensitive individuals), or risk factor which enables quantification of lifetime carcinogenic risk

Uptake into homegrown produce (and ingestion of produce)

> Intakes from sources other than EfW (soil, water, food, products)

# How is the Air Quality Impact Assessment undertaken?

#### There are five primary components:

### 1. Baseline analysis

### 2. Meteorological modelling

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### **3. Air pollution emission calculations**

### 4. Atmospheric dispersion modelling

model settings and configurations.

### 5. Air Quality Impact Assessment

quality impacts at surrounding sensitive locations.

Real-world local and regional monitoring data is gathered to assess trends in current air pollution concentrations and meteorological conditions.

To provide inputs to the air pollution emission dispersion modelling, detailed three-dimensional meteorological modelling is completed.

Air pollutant emission rates are quantified using project specific emissions data.

Atmospheric dispersion modelling of air pollutant emissions is undertaken with a NSW EPA approved dispersion model, following recommended

The results of the dispersion modelling are then combined with emissions from regional air quality background datasets to predict cumulative air

Three dimensional terrain surrounding the Woodlawn Eco Precinct.

