

FREQUENTLY ASKED QUESTIONS

COMMUNITY Q + A

CLEANAWAY WESTERN SYDNEY ENERGY AND RESOURCE RECOVERY CENTRE

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This document contains answers to some questions we believe people may ask about the proposal. As part of our community engagement, and we are committed to answering all of the community's questions.

These questions are grouped under several headings:

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If your question is not here – please ask by contacting us at:

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Section 1: The proposal	
<p>What is proposed?</p>	<p>An energy-from-waste facility is proposed by Cleanaway and Macquarie Capital.</p> <p>The proposed Western Sydney Energy and Resource Recovery Centre (WSERRC) will use safe and modern energy-from-waste technology to thermally treat up to 500,000 tonnes of waste, creating enough electricity to power more than 79,000 homes and businesses.</p> <p>Prior to arrival at the WSERRC, waste will be taken to a pre-processing facility to recover any valuable recyclables that may have been disposed of by mistake. The remaining residual waste, that cannot be recycled and would otherwise be sent to landfill, is transferred to the WSERRC for recovery of energy to generate electricity.</p> <p>As well as generating electricity, the Centre will recover and recycle metals that would have gone to landfill and look at opportunities to reuse the ash. This will result in more than 95% of incoming waste being diverted from landfill!</p> <p>The proposal includes the establishment of an on-site Visitor and Education Centre. Visitors can tour the facility, learn about waste reduction, the circular economy, best practice re-use, recycling, and energy-from-waste.</p>
<p>Is it safe?</p>	<p>Cleanaway’s energy-from-waste proposal is safe and based on proven technology that is used widely across the globe, including some of the world’s cleanest and most beautiful cities such as Dublin, Leeds, Oslo, Malmo, Paris and Copenhagen.</p> <p>Energy-from-waste technology has been improved over several decades. Approximately half the centre’s footprint is devoted to cleaning the emissions ensuring the best possible environmental and health outcomes.</p> <p>The proposal is designed in accordance with strict European standards and the associated <i>Best Available Techniques Reference Document</i>. Importantly the Centre will comply with all technical criteria set out in the <i>NSW Energy-from- Waste Policy Statement</i>.</p>
<p>What sort of waste would be processed at the Western Sydney Energy and Resource Recovery Centre?</p>	<p>The Centre would accept residual red bin waste from households and businesses e.g. offices, schools, factories, retails and restaurants.</p>

	<p>The sorts of things that people put in red bin are packaging and packing materials, bits of treated wood, old games and plastic toys, nappies, tissues and sanitary items, torn clothes, or unwanted kitchen utensils.</p>
<p>What areas in Sydney would the waste come from?</p>	<p>Cleanaway is committed to working with Western Sydney councils and businesses to offer them a more environmentally and economically sustainable alternative for dealing with the household and business red bin waste that would otherwise end up in landfill.</p> <p>Importantly, the size of the proposed Centre would be sufficient to process approximately one third of the waste from Western Sydney currently going to landfill.</p> <p>Subject to the take-up by Western Sydney councils, the Centre may accept waste from other local council areas.</p>
<p>Does the proposal remove the need for recycling?</p>	<p>No, this is an alternative to landfill. Energy-from-waste is a solution for residual waste that cannot be recycled and does not diminish the need for recycling.</p> <p>Overseas experience shows that recycling rates will not suffer with an energy-from-waste plant in place. For example, 60% of waste in Germany is recycled, with the remaining 40% recovered through energy-from-waste. Australia’s recycling rates are behind many international countries that use energy-from-waste.</p> <p>Cleanaway is committed to supporting recycling initiatives, for example the Return and Earn container deposit scheme, and improved source separation of waste through education to reduce contamination rates and maximise the value of the materials</p>
<p>Does building energy-from-waste facilities prevent Australia from moving to a circular economy and zero-waste future?</p>	<p>No, if anything, energy-from-waste is a complimentary process that will aide our transition firstly to a circular economy and then towards a zero-waste future.</p> <p>The proposed Centre will pre-sort red bin waste before it is sent to the Centre to recover any valuable recyclables. At the Centre, embodied energy is recovered from residual waste that has no other recovery pathway. Following combustion, metals that would otherwise be disposed of in landfill are recovered for recycling. Additionally, we are looking to reuse the ash in construction processes. This would allow us to divert over 95% of incoming waste from landfill and maximise the recovery of resources.</p>

<p>What is your track record in building these facilities – how many have you built?</p>	<p>Macquarie Capital is a specialist developer, sponsor and investor, with a mission to accelerate the transition to a greener global economy. With more than 450 dedicated green energy professionals, Macquarie Capital has invested in over 35 waste and biomass projects globally – from small scale anaerobic digestion plants to large scale energy-from-waste facilities, including Australia’s first thermal waste-to-energy project, Avertas Energy in Western Australia.</p> <p>The ideas, capital and expertise of Macquarie Capital are powering green opportunities across Australia and around the world.</p> <p>Cleanaway is Australia’s largest waste manager and generators of energy-from-waste. Each project reduces our reliance on fossil fuels.</p> <p>There are different ways to generate energy-from-waste. Cleanaway is already operating gas capture systems that use methane from decomposing waste at its landfill sites, to generate approximately 135,000 MWh of renewable energy per annum. This is the equivalent of powering 29,000 homes.</p> <p>In Camellia NSW, Cleanaway operates an anaerobic digestion facility that recycles organic waste to produce 9,297 MWh of renewable electricity each year, enough to power 3,600 households.</p> <p>Cleanaway co-owns (with ResourceCo), and operates, the only Process Engineered Fuel manufacturing plant in NSW. The Wetherill Park facility converts up to 250,000 tonnes each year of commercial and industrial waste into a fuel for that is used as a substitute for coal and gas in cement kilns.</p>
<p>When would construction start?</p>	<p>If approved in 2021, construction would commence in 2022. Approximately 900 direct construction jobs and an additional 700 to 1200 indirect jobs would be created.</p>
<p>When would it start operating?</p>	<p>Construction would take approximately 39 months, including 6 months of commissioning before operations can commence possibly in 2025. Some 50 full time, local, skilled operational jobs would be created.</p>
<p>What would the building look like?</p>	<p>Quality of design is important to us. The early architectural design has been completed and will resemble the below. Care has been taken to design a facility that embodies innovation, integrates into the local context, reinvigorates the landscape and functions as an educational tool.</p>



What is the physical size of the Energy and Resource Recovery Centre? How big is it?

The Centre is proposed on a site that is 8 hectares. This will provide enough room to build the Centre, administration buildings and the Visitor and Education Centre.

Overall, the main building is expected to be about 200 metres long, 60 metres wide and 50 metres tall. The Centre’s stack would be built to a height of about 75 metres.



	The Centre is designed to process up to 500,000 tonnes of waste that cannot be recycled each year. This would equate to managing about one third of Western Sydney households and business residual waste.
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Section 2: Waste in Sydney	
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How much waste is produced in Western Sydney and where does it go?	<p>By 2020, Western Sydney will have over 1.6 million tonnes of waste going to landfill each year. This is the same as 2,400 Olympic-sized swimming pools each year!</p> <p>While we are recycling, more people and new developments mean we are generating more waste. Experts estimate an additional one million people will move into Western Sydney between now and 2030 (<i>Metropolitan Strategy for Sydney 2031 - A Plan for Growing Sydney</i>).</p> <p>Approximately 54% of Western Sydney’s household waste is currently recycled. The remainder is sent to landfill (<i>Western Sydney Regional Waste Avoidance and Resource Recovery Strategy 2017-2021</i>).</p> <p>Each year, the majority of Sydney’s household red bin waste goes to two landfills, Lucas Heights and Goulburn.</p>
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Are our landfills filling up?	<p>Yes, according to the National Waste and Recycling Industry Council, our landfills are filling up.</p> <p>This means we need new solutions to meet Sydney’s growing waste management needs (National Waste Report 2018 prepared for the Department of Environment and Energy).</p> <p>According to the National Waste Report 2018, approximately 9 % of Australia’s municipal solid waste is currently used to recover energy.</p>
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Section 3: The technology	
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What technology will be used?	<p>The Centre will use moving grate combustion technology and a modern flue gas treatment system.</p> <p>Moving grate technology is safe, proven technology that is used widely across the globe, including in the centre of some of the world’s cleanest and most beautiful cities such as Dublin, Oslo, Malmo, Copenhagen and Paris.</p>
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	<p>There are approximately 500 facilities across Europe alone using the same technology as we are proposing.</p> <p>The flue gas treatment system is designed in accordance with international best practice techniques. It is a multi-step system that clean the gases, resulting in 99.9% of the volume leaving the stack being gases common to air, including oxygen, hydrogen, nitrogen and water vapour (steam), which quickly disperse.</p> <p>The Centre will perform to the standards detailed in the European Industrial Emissions Directive and Best Available Techniques Reference document - these are the current highest standards in the world for energy-from-waste. The Centre will also comply will all requirements prescribed by the NSW government.</p>
<p>What are your reference facilities?</p>	<p>Reference facilities are a requirement under the NSW Energy from Waste policy and provide operating data for a representative facility. To be considered representative, a good reference facility must accept similar waste streams, be a similar size and use the same technology.</p> <p>Our reference facilities are the Dublin Energy-from-Waste facility in Ireland and the Filbörnaverket facility in Filbörna, Sweden.</p>
<p>How is energy produced?</p>	<p>The Centre converts waste into electricity through a high temperature combustion process. Waste is combusted in an enclosed furnace at more than 850°C producing heat to generate steam, which then turns a turbine and creates electricity.</p>
<p>Is there any waste leftover at the end of the process?</p>	<p>Following combustion, about 20% of the original volume remains as bottom ash. Metals, that would otherwise be disposed of in landfill, are then screened out of the bottom ash and recycled.</p> <p>Overseas, it is common to reuse the bottom ash in construction processes. We are looking to do the same thing here, which would enable over 95% of waste entering the Centre to be diverted from landfill.</p> <p>Fly ash and flue gas treatment residues make up less than 5% of the total waste and are a combination of the extracted pollutants such as dioxins and heavy metals and the materials used in the emissions cleaning process. These ash residues are treated to immobilise the pollutants before being safely disposed of in a specialised landfill.</p>

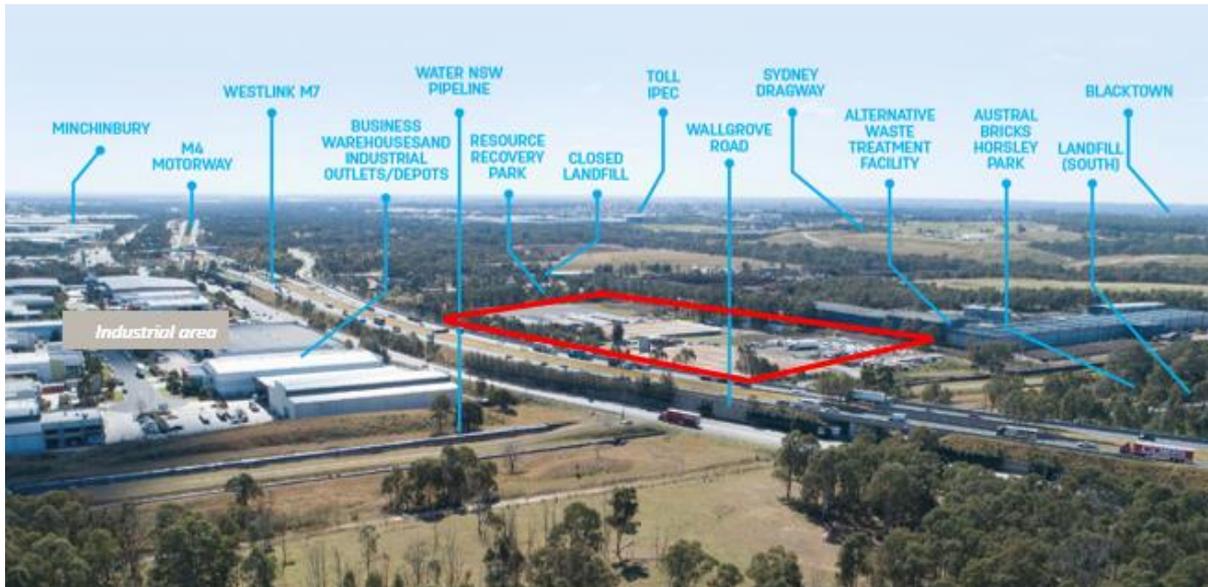
<p>How is hazardous waste managed?</p>	<p>We know people place things in the red bins that should not be there and will have a variety of waste receipt protocols to minimise the likelihood of hazardous waste entering the Centre.</p> <p>These measures include strict waste acceptance criteria, a pre-sorting process to extract any large hazardous items, radiation detection on-site, and visual inspections upon disposal.</p> <p>In the event that smaller hazardous items end up concealed with other waste and enter the facility, the technology is designed to cope with, and treat the emissions associated with the inadvertent combustion of hazardous materials.</p>
<p>When do you turn it off?</p>	<p>To ensure a consistent supply of electricity, the Centre would operate 24 hours a day, 7 days a week. Planned maintenance shutdowns will occur each year to ensure safety. The Centre will operate safely at all times.</p>
<p>What is the expected lifespan of the plant?</p>	<p>These facilities typically run for 30 years or more and are upgraded as technology improves.</p>

<p>Section 4: The impacts</p>	
<p>Will this proposal impact our climate?</p>	<p>The Centre will contribute a net reduction in climate change gases that contribute to the heating of our planet. These savings are sizeable. If the Centre processes (at capacity) 500,000 tonnes per annum of waste, it will remove the equivalent of more than 390,000 tonnes each year of carbon dioxide (CO₂e) that the waste would generate if sent to landfill. This is the same as taking approximately 85,000 cars off the road.</p> <p>While CO₂ will be released from the WSERRC, a net reduction in climate change gases is achieved through:</p> <ul style="list-style-type: none"> • A reduction in methane gas. Methane is 25x worse than CO₂ and generated when waste is disposed of in landfill • The displacement of CO₂ released through fossil fuel-based electricity generation
<p>Will the air from the Centre be safe?</p>	<p>Yes. The proposed Centre will meet the emission limits set by international best practice which are well below the NSW limits.</p>

	<p>The air pollution control technology will comply with international best practice techniques.</p> <p>Current international best practice techniques are in respect to:</p> <ul style="list-style-type: none"> • process design and control, • emission control equipment design and control, and, • emission monitoring with real-time feedback to the controls of the process.
<p>How will the air be monitored when the Centre is operating?</p>	<p>Cleanaway would monitor the air in the stack continuously to ensure the emissions are cleaned to the highest standards.</p> <p>As part of meeting our commitment to safety and community transparency, live data will be provided to the NSW EPA and we will regularly post the air quality data to the project website for everyone to access.</p>
<p>How much noise will the Centre generate during operation? Will neighbours be able to hear it?</p>	<p>The Centre will operate within standard noise limits for the industrial zoning applying to the area where it is to be built.</p>

Section 5: The location	
<p>Why have you chosen this site?</p>	<p>Over 12 months, some 400 industrial sites were identified across the wider Sydney area. After extensive consideration, we settled on this site at Wallgrove Road for the following reasons:</p> <ol style="list-style-type: none"> 1. The site is adjacent to existing waste infrastructure, including a landfill to the north and a waste processing facility to the east 2. The site is situated in an existing industrialised area 3. It is close to major roads, the M7 Motorway and the M4 Motorway – reducing the impact on local traffic 4. Residents and special land uses in the surrounding areas of different locations were considered. The site is located in the Western Sydney Parklands and is aligned with planned use as a waste and recycling precinct. The nearest residential areas are approximately 1 kilometre away. 5. It is located on land where energy-from-waste development is permissible under State law.

	<p>6. Accessibility to infrastructure such as water and high voltage electricity lines are also important when selecting a site. This site is close to this infrastructure.</p> <p>Our case studies on the website have maps that show modern waste centres can be located close to residential areas, which is quite common in Europe and the UK. Recognising that energy-from-waste is new to Australia, we thought it was more appropriate to locate the Centre in an industrial area with larger distances to residences.</p>
<p>Why are you building this in Western Sydney? Why can't we build it outside of Sydney?</p>	<p>Transporting waste long distances is impractical and not sustainable. Waste needs to be managed in a way that is:</p> <ul style="list-style-type: none"> - environmentally sustainable, - economically makes sense, and, - socially sustainable. <p>Reducing the vehicle kilometres travelled transporting waste and saving on greenhouse emissions, NOx and particles from vehicle exhausts wherever possible is environmentally important.</p> <p>As our cities grow, it is recognised that providing local solutions for all our essential services enable communities that are sustainable and have access to reliable services essential to their liveability and prosperity.</p>
<p>How close is the chosen site to housing?</p>	<p>The nearest residence is approximately 1 km from the site. The Centre will be completely safe and similar centres have no measurable impact on air quality.</p>
<p>Who are the neighbours to the property?</p>	<p>There are several different facilities in the area shown on the image below.</p>



Section 6: The overseas experience	
Are there similar energy-from-waste facilities overseas?	<p>There are approximately 500 similar facilities in Europe. They are also common in Japan, USA and Singapore.</p> <p>Because the technology and its safety is proven, facilities are being built in city centres, urban areas, as well as in regional areas. Case studies can be found on the website at www.energyandresourcecentre.com.au.</p>
Are energy-from-waste plants being shut down overseas?	<p>Some plants are closing in Europe and America as a normal process of retiring older or obsolete plants that have reached the end of their life. Closed plants are older models and using outdated technology. New plants are being constructed in many countries, including China, England and Sweden, and elsewhere. Existing centres are being expanded to increase capacity or upgraded to improve their performance and extend their operational life.</p>

Section 7: The planning process	
What is the process for gaining approval for this project?	<p>The project will be considered by the NSW Government as a State Significant Development. This requires the assessment of social and environmental benefits of a project as well as the economic benefits.</p>

	<p>This process involves the preparation and submission of an Environmental Impact Statement (EIS) to the NSW Government, to support a Development Application. The EIS is exhibited publicly for a minimum of 28 days. The community is invited to make submissions in this period.</p> <p>The following studies have been prepared.</p> <ul style="list-style-type: none"> • Air quality & Odour • Human health • Waste & Resource Management • Best Available Techniques • Waste Flow Analysis • Soils & Water • Contaminated land • Hydrology & Flooding • Noise and vibration • Hazard and risk • Traffic, transport and access • Landscape and visual amenity • Social Impact • Greenhouse gas and Energy Efficiency • Aboriginal Cultural Heritage • Utilities and Services • Biodiversity Development Assessment • Vegetation <p>These studies will be published on the website and communicated to residents.</p>
<p>Who is the consent authority?</p>	<p>Once the Environmental Impact Statement exhibition process is finished, the Department of Planning, Industry and Environment may refer the proposal to the Independent Planning Commission (IPC). The Commission’s process includes community consultation. A report is prepared that responds to all community and agency comments. The IPC reviews the project and makes a determination.</p>

Section 8: Community engagement and involvement	
<p>How will Cleanaway invest in the local community?</p>	<p>We are committed to engaging with the community throughout the EIS exhibition, construction and operation of the Western Sydney Energy and Resource Recovery Centre.</p> <p>A Community Reference Group (CRG) will be established during construction to ensure genuine discussion and collaboration continues with the community. The CRG will continue to meet throughout operation.</p> <p>A community funding package of \$150,000 per year will be established to support community projects and initiatives. To ensure the funding is allocated with the wider community interest in mind, it will be administered by the CRG.</p>
<p>How can I get involved? Who can I talk to?</p>	<p>We have a telephone information line: 1800 97 37 72</p> <p>Email: energyandresourcecentre@cleanaway.com.au</p> <p>Website: www.energyandresourcecentre.com.au for you to visit, find information, submit your questions and concerns and register for updates.</p>