

**Submission  
No 145**

## **INQUIRY INTO 'ENERGY FROM WASTE' TECHNOLOGY**

**Organisation:** SUEZ  
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Recycling & Recovery

Portfolio Committee NO. 6 – Planning & Environment  
 Parliament of New South Wales  
 6 Macquarie Street  
 SYDNEY NSW 2000

Dear Committee Chair & Members

**RE: Inquiry into Energy from waste technology**

SUEZ welcomes the opportunity to contribute to the Inquiry on Energy from Waste technology. As an expert provider in Energy from Waste (EfW) facilities globally, SUEZ is supportive of the development of the EfW Market in New South Wales. We believe there is a role for a proven and reliable Energy from Waste facility at the right scale and capacity to meet the needs of the state. SUEZ is currently exploring opportunities to leverage its knowledge and experience to invest in facilities in various markets across Australia, including New South Wales. We thank the Committee for the opportunity to respond to a number of points raised in the Terms of Reference.

***a) the current provision of waste disposal and recycling, the impact of waste levies and the capacity (considering issues of location, scale, technology and environmental health) to address the ongoing disposal needs for commercial, industrial, household and hazardous waste***

***b) the role of ‘energy from waste’ technology in addressing waste disposal needs and the resulting impact on the future of the recycling industry***

In Australia, waste that is not re-used or recycled is ultimately disposed of in landfill. Whilst modern and highly engineered landfills play a necessary role in managing New South Wales’ waste, energy recovery is the missing link in the state’s waste management infrastructure. The NSW Government’s waste hierarchy acknowledges the role that energy recovery can play. However, to date, there has been extremely limited investment in energy recovery technologies in the New South Wales.



Energy from Waste (EfW) is the process of converting waste that is not recycled into electricity, steam and/or heat. The facilities recover energy from waste that would otherwise go to landfill. Metals are recovered and by products from the process (bottom ash) can be further processed and used as a road construction material,

as is common practice in Europe. EfW facilities can divert in excess of 95% of waste from landfill and should play an essential role in future efforts to reduce waste and increase resource recovery.

SUEZ operates more than 60 EfW plants across the world and strongly believes there is a role for a proven and reliable Energy from Waste facility in New South Wales at the right scale and capacity to meet the needs of the state. The average capacity of an EfW facility in Europe is around 200,000 tonnes per annum (tpa) with some more recent projects with a larger capacity of between 250,000 to 400,000tpa. In North America, the average capacity is at around 370,000 tonnes per annum. The vast majority of the facilities are designed to process predominantly domestic waste or (Municipal Solid Waste) with a small proportion of commercial and industrial waste (up to 30%).

To provide some context, SUEZ has been exploring the development of facilities ranging from 250,000 - 400,000 tonnes of waste per annum in Australian capital city markets. A facility that processes 400,000 tonnes of waste per annum would generate a net energy capacity of 38MW or enough electricity to power 50,000 homes. A plant of this size would require a capital investment between \$400 and \$500 million, provide 250-300 construction jobs, 60-80 ongoing jobs and generate 20MW of renewable baseload power generation whilst reducing greenhouse gas emissions by approximately 100,000 tonnes a year. The renewable power generation would contribute an additional 0.5% towards the current Australian Renewable Energy Target of 20%.

***c) current regulatory standards, guidelines and policy statements oversighting 'energy from waste' technology, including reference to regulations covering***

***i. the European Union***

***ii. United States of America***

***iii. international best practice***

***d) additional factors which need to be taken into account within regulatory and other processes for approval and operation of 'energy from waste' plants***

Energy from Waste projects are complex and delivering a project requires market certainty and appropriate risk allocation. There are many elements which are important in driving a successful investment in Energy from Waste. These include:

- **Appropriate waste levy setting** - SUEZ considers that the waste levy price pathway in New South Wales is supportive of investment in Alternative Waste Treatment (AWT) and Energy from Waste infrastructure.

- **Stable planning and regulatory environment** – Clear processes for siting and permitting of waste management facilities is extremely important. SUEZ acknowledges the development of the New South Wales Energy from Waste (EfW) Policy Statement and we broadly support the policy's principles, particularly that higher order resource recovery outcomes should be maximised and 'mass burn' disposal outcomes avoided. However, the requirement that only 40% of residual waste can be allowed for energy recovery from Council's without combined Food & Garden Organics (FOGO) processing is particularly onerous. SUEZ believes that source separation of dry source separated recyclables and garden waste should be sufficient before residual waste is sent to energy recovery. This aligns to overseas markets such as the United Kingdom, France and Germany where domestic waste is processed through Energy from Waste facilities after recyclables are separately collected.

Furthermore, a clear regulatory framework for the use of the material that could be produced from the bottom ash is a prerequisite to the possible development of EfW facilities.

- **Customer and market demand and committed waste supply** – To support investment in EfW, it critical to have a significant proportion of the required waste supply committed under long-term agreements (20+ years). Given the fragmentation of the Sydney capital city market in particular, Council's would need to consider grouping together in a waste processing agreement to an EfW facility. Assurance and consistency of inbound waste tonnes is key in attracting investment in a new facility and supporting its bankability or finance. Governments can also have a role to play in stimulating investment in EfW through market development programs incentives.
- **Education** –. SUEZ believes that joint education and communications between proponents and Governments (state and local) and early consultation with communities is essential to a successful development. SUEZ recognises the importance of engaging with and obtaining input from local communities and key stakeholders throughout the life of a project, including design and preparation, implementation, completion and operation and any renewal or extension. Common community concerns about waste management facilities include noise, traffic, dust and emissions generation. Modern waste facilities and operators have comprehensive plans and technology to manage these concerns and good community consultation provides an opportunity to highlight the role environmentally safe and proven Energy from Waste technology can play in meeting our essential waste management needs.

With regard to emissions, Energy from Waste is among one of the most tightly regulated industrial processes in jurisdictions such as Europe. In order to meet the European emission limits, EfW facilities burn waste at high temperatures and are equipped with a sophisticated system for cleaning the flue gases and removing ash particles prior to discharge. Around two thirds of the footprint of a modern EfW facility is dedicated to emissions control and what comes out of the facilities chimney is largely steam, oxygen, nitrogen and carbon dioxide. Consistency of the incineration and flue gases cleaning processes is ensured through comprehensive processes controls and monitoring.

When considering investment in Australia, SUEZ has proposed facilities that are designed to satisfy the strict standards of the European Union's current Waste Incineration Directive (WID). The WID's objectives are to minimise the impact from emissions to air, soil, surface and ground water on the environment and human health. The key requirements in the WID for the operation of a facility are:

- A minimum combustion temperature and residence time of the resulting combustion products. For municipal waste the minimum requirement of 850°C is for at least two seconds
- Specific emission limits for the release to atmosphere of the following: Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Oxides (NO<sub>x</sub>), Hydrogen Chloride (HCl), Volatile Organic Compounds (VOCs), Carbon Monoxide (CO), Particulate (fly ash), Heavy Metals and Dioxins.

The chimney's at EfW facilities are equipped with continuous monitoring equipment (CEMS), which must be in full working order at all times. If any part of the monitoring equipment fails, the EfW facility is not allowed to operate and must shut down immediately. Emissions from facilities are also often publicly reported. For example, at our EfW facility in Suffolk in the UK, the emissions monitoring information is displayed both in the visitor centre and on the SUEZ website. Daily emissions data is provided and compared to our license limits. An example of this detailed reporting can be found here: <http://www.suffolkefw.co.uk/the-facility/emissions/emissions-monitoring>.

The NSW Energy from Waste Policy Statement's technical criteria on emissions aligns with these strict global standards and global best practice.

***h) any other related matter.***

Finally, one of the other aspects hindering investment in EfW investment in New south Wales is the unnecessary transport of waste between states and territories in Australia, largely due to the differential in state waste levies. The transportation of waste over long distances for economic gain reduces the incentive for businesses to invest in recycling and resource recovery infrastructure in NSW. It undermines the incentives set out by the NSW Government in the 'Waste Less, Recycle More' strategy and also has a significant economic cost to the state of NSW.

With in-excess of 500,000 tonnes of waste being transferred north to Queensland each year, the NSW Government's planned removal of the proximity principle is a backwards step in addressing this environmental issue. SUEZ promotes the local management of waste and believes that its treatment and disposal should take place at the closest possible location to where it is produced unless it is being disposed of at an interstate facility with better environmental performance standards than in New South Wales. The proximity principle is written into the European Commission's Waste Framework Directive and has also been a central value in municipal solid waste management in Japan for over 35 years<sup>1</sup>.

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<sup>1</sup> State of NSW, Environment Protection Authority (2014) *Supplementary Regulatory Impact Statement - Protection of the Environment operations (Waste) Regulation 2014*

The unnecessary transport of waste undermines any potential investment in resource recovery infrastructure such as Energy from Waste technologies and the associated economic benefits and employment generation such an investment brings.

In closing, SUEZ appreciates the opportunity to provide these short comments. Should you require any further information, please don't hesitate to contact me or

Yours sincerely,

Mark Venhoek  
Chief Executive Officer  
SUEZ Australia & New Zealand