Submission
No 243

INQUIRY INTO PROPOSED ENERGY FROM WASTE FACILITIES

Organisation: SEATA Holdings Pty Ltd

Date Received: 30 October 2025

SEATA
Deconstructing the world's problems

29 October 2025

The Hon. Nichole Overall,
MLC Committee Chair
NSW Legislative Council Select Committee on Proposed Energy from Waste Facilities
Parliament House
Macquarie Street
Sydney NSW 2000

Dear Mrs Overall

Re: Submission to the Select Committee on Proposed Energy from Waste Facilities

On behalf of SEATA Holdings Pty Ltd (SEATA), I am pleased to provide the attached submission in an endeavour to introduce to you and to the Legislative Council Select Committee on Proposed Energy from Waste Facilities, a new, innovative Australian technology.

The attached submission specifically addresses Enquiry Item 1 (a) of the Terms of Reference.

SEATA has a field scale Research and Development Scale Model (RDSM) constructed, commissioned and operating under a NSW EPA issued License to trial specified feedstocks. The technology is patent protected and is undergoing field trials in NSW using the RDSM.

SEATA's submission summarises the more relevant aspects of this Australian technology which has been specifically designed to treat carbonaceous feedstock/waste in a unique, novel, thermal treatment regime to simultaneously produce energy rich syngas, valuable bio char, and pure carbon dioxide in a carbon neutral/carbon negative process that is economically viable, environmentally sustainable, socially acceptable and ensures a circular economy for the relevant waste.

I thank the committee for the opportunity to make this submission and contribute to this very important enquiry. I implore the committee to prioritise Australian designed and Australian owned solutions to allow emerging technologies to be fast-tracked for use at home and export abroad.

Your Sincerely

Rob Tew
Director

SEATA Holdings Pty Ltd

ABN – 87 628 218 342

SEATA's SUBMISSION

COMPARISON OF SEATA TECHNOLOGY WITH ALTERNATIVE TECHNOLOGY

There are a range of competitors in the thermal treatment of waste market however, the advantages of SEATA's process when compared with similar technology treatments around the world includes the following:

- SEATA's technology combines well established process design and knowledge with unique patented technology in a novel approach to facilitate an efficient production outcome.
- Scalable and continuous technology – a SEATA plant can be tailored to the particular project and scale – size range from 5t/hr up to 100t/hr infeed (37,000t/yr – 745,000t/yr).
- Capability to treat a broad range of feedstock - biomass and all other carbonaceous waste as well as blended feedstocks to maximise product outputs.
- Produces surplus, unadulterated, energy intense syngas (approximately 66% by mass) which can be used to generate power immediately or stored to be used as a source of firming power.
- Remaining 34% of syngas is utilised for operational purposes.
- The syngas has ideal characteristics for synthesis to Bio Methanol, Dimethyl ether (DME), Bio Methane, Syn-diesel, SAF, Green Hydrogen, Green Ammonia, Olefins, etc. using existing technologies.
- H_2 to CO ratio is greater than 2:1 and generated directly.
- Capable of dealing with higher moisture content feedstock (up to 40% moisture content) without the need for addition energy.
- Capable of treating feedstock sized to <40mm.
- Higher thermal efficiency therefore a net energy producer.
- Syngas is capable of economical storage.
- Flexibility of on demand power generation as well as utilisation of excess power from other renewables when available to enhance power storage through compression of syngas
- ~ 30% of carbon in the feedstock reports as a solid biochar fraction.
- Specific to feedstock, SEATA's technology produces a high quality biochar – suitable for a range of uses.
- All compounds are dealt with as part of the process.
- No harmful emissions and no waste water.
- Low water usage – wet quench and scrubbing of the syngas only.
- No ash – ash remains with the biochar, hence inorganic nutrients are returned to the paddock.
- Binds metals in the biochar (if present).
- No tars and resins.
- No air separation unit and no acid gas removal.
- Capable of scalable volumes of biochar production for use with fertiliser blends, road stabilisation, steel reductants, filter media (water filtration), cement manufacture and a range of other uses.
- Produces a valuable, stable, carbon rich soil enhancer.
- Circular economy assured with carbon negative outcomes for carbonaceous waste.
- Capture and use of high purity CO_2 for commercial purposes.
- Carbon sequestration and carbon avoidance credits are available.
- Standard materials of construction.
- Comparatively lower capital cost.
- Operational efficiencies increase with scale.
- SEATA's technology is a complimentary technology which allows existing infrastructure / existing systems to remain in use or alternatively can be deployed as a standalone solution.
- Simultaneous production of syngas, biochar and CO2 in varying proportions specific to feedstock.
- SEATA's technology can achieve true circularity as materials exiting the process remain discrete and therefore can be separated and recycled using existing bolt-on technologies.

COST AND DEPLOYMENT TIMEFRAMES

The NSW Waste and Sustainable Materials Strategy 2041, identifies that a mix of waste infrastructure is needed to deal with NSW's existing and anticipated waste volumes.

Sydney's waste is such that the existing landfill capacity at Lucas Heights is anticipated to be exhausted by 2030.

NSW waste is forecast to grow to 27 million tonnes per annum in 2041. Sydney is anticipated to exhaust existing landfill capacity by 2030.

SEATA's technology has potential to deal appropriately with primary waste as well as residual waste at a designated location and tailored to scale.

To ensure reduced risk to the potential client – SEATA recommends a two-step commercial scale up to be completed over a 5 year timeframe to realise a tailored size SEATA plant treating waste in a location of the clients choosing in an economically viable, environmentally sustainable and socially acceptable manner.

Timeframe and actions:

Step 1:

Item	Description	SEATA Plant Size (5t/h – 37,000t/yr)	Amount (Ex GST)	Time Frame
1	Project/Concept Scope		$75,000	1 month
2	Representative test work & analysis		$850,000	4 months
3	Appointment of an EPCM – Detailed Engineering and Design Feasibility.		$3,000,000	6 months
4	Investment Decision		$75,000	1 month
5	Construction		$15,000,000	12 months
			$19,000,000	24 months
6	Contingency		$1,900,000	
	Total		$20,900,000	

Step 2:

Item	Description	SEATA Plant Size (40t/h – 300,000t/yr)	Amount (Ex GST)	Time Frame
1	Project/Concept Scope			
2	Representative test work & analysis			
3	Appointment of an EPCM – Detailed Engineering and Design Feasibility.		$12,000,000	6 months
4	Investment Decision			
5	Construction		$68,000,000	18 months
			$80,000,000	24 months
6	Contingency		$8,000,000	
	Total		$88,000,000	

The tables above do not identify the time and cost to deal with the applicable regulatory and approvals process.

It is reasonable to consider that anticipated timeframes to successfully achieve relevant approvals and licensing is 12 – 24 months in an unassisted standard approach and cost approximately $1.0Mil - $2.0Mil dependent upon influencing factors determined by the specific project, including location, waste source and scale of development.

Projected Return on Investment ranges from 25% to 48% dependent upon relevant factors such as scale and feedstock cost. The larger the scale the larger the return.

Conclusion

There is a pressing need to deal responsibly with NSW's anticipated waste volumes in a timely manner.

SEATA's technology has potential to be a major contributor to resolve NSW's waste problems within the necessary timeframes – by either working in conjunction with other complimentary treatment technologies or alternatively operating as an independently deployed solution.

SEATA's carbon neutral/carbon negative treatment regime has potential to extend the economic and functional life of a number of existing technologies in existing sectors which otherwise would be considered redundant/unviable as the world advances towards optimal decarbonisation.

SEATA's technology has potential to facilitate NSW's achieving optimal outcomes in respect to energy from waste solutions as well as a reduction of reliance upon landfill.

SEATA's technology can achieve true circularity as materials exiting the process remain discrete and therefore can be separated and recycled using existing bolt-on technologies. SEATA's ability is distinct from existing practises which include predominately land fill or incineration of waste.

There is a surfeit of carbonaceous feedstock/waste to supply SEATA plants of all sizes dependent upon location and operational scale.

Offtake markets exist and are available for all SEATA products.

New markets have emerged and are anticipated to continue to emerge for additional products and tonnages as this market matures.

Prioritise Australian designed and Australian made technologies and lead the world in resolving problematic waste management.