REQUEST FOR SEARS

The Next Generation: Energy from Waste, Eastern Creek

Prepared for
THE NEXT GENERATION
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URBIS

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Energy from Waste (**EfW**) is a process of thermally treating residual waste fuels to generate electricity and reduce waste going to landfill. The Next Generation EfW Facility is intended to divert up to 300,000 tonnes of residual waste from landfill in the Sydney Metropolitan Area and generate electricity for up to 36,000 homes.

The EfW Facility will be constructed on part Lots 1 & 2 and Lot 3 in DP 1145808 within the Eastern Creek Industrial Estate, Eastern Creek (**the Site**). Part Lots 1 & 2 are the subject of a current development application for subdivision with Blacktown City Council (**Council**) and the Site is identified under the subdivision plan as proposed Lot 13 and Lot 3 in DP 1145808. The broader site supports an established waste recovery facility, material processing centre and landfill known as the Eastern Creek Recycling Ecology Park & Landfill (previously known as Genesis Xero Waste). The landfill activity is carried out within a former quarry and accepts as landfill waste materials that cannot be reused or recycled.

The proposed EfW Facility is classified as an '*Electricity Generating Works'* with a capital investment value of approximately $290 million and is defined as State significant development (**SSD**) under *State Environmental Planning Policy (State and Regional Development) 2011*.

STATE SIGNIFICANT DEVELOPMENT

The proposed EfW Facility meets the requirements of SSD, under section 4.36 of the *Environmental Planning and Assessment Act 1979* (**EP&A Act**), as it meets the provisions set out in clause 20 of Schedule 1 of the *State Environmental Planning Policy (State and Regional Development) 2011*. Clause 20 of Schedule 1 relates to development for the purpose of co-generation of heat and electricity using waste as an energy source that has a capital investment value of more than $30 million.

This document has been prepared in order to facilitate the issuing of Secretary's Environmental Assessment Requirements (**SEARs**) for a proposed EfW Facility (**the Project**). The SEARs will guide the preparation of an environmental impact statement (**EIS**) to support a development application for SSD for the proposal under Division 4.7 of the EP&A Act.

THE APPLICANT

The Applicant for the Project is The Next Generation NSW Pty Ltd (**TNG**). TNG is a stand-alone company owned by the Eastern Creek Land Trust (**ECLT**). ECLT has contracted to own the land upon which is the Project is proposed to be built and operated.

Formerly part of the Dial A Dump Industries Group, TNG no longer owns or operates waste management facilities or has commercial dealings with waste or the processing or disposal of waste.

TNG is not proposing that it, or any associated entity, operate the proposed EfW Facility. As the landowner, TNG is seeking planning permission for an energy recovery facility to be constructed and operated within the parameters of the Site.

BACKGROUND AND PURPOSE OF THIS REPORT

A development application for SSD (SSD 6236) was lodged with the former NSW Department of Planning and Environment (**the Department**) in April 2015 with an accompanying EIS for an EfW Facility with the capacity to process up to 1.35 million tonnes of residual waste fuel per annum. The development application was placed on public exhibition between 27 May 2015 and 27 July 2015. During this time the community, key stakeholders and interest groups were invited to make a submission either using the online submission tool on the Department's website or by providing a written submission.

An amended EIS and response to submissions report (**RTS**) were submitted to the Department in November 2016. These documents were placed on public exhibition between 9 December 2016 and 1 March 2017. The community, key stakeholders and interest groups were again invited to make a submission. In March 2017, the Department formally requested the Applicant provide a further RTS, this was lodged in July 2017. The Department sought additional information in August 2017 and TNG lodged an amended development application and RTS in September 2017 which was made publicly available on the Department's website and was provided to key government authorities and external experts retained by the Department for comment. Subsequent to this the Applicant submitted supplementary information and a final RTS in February 2018.

The Department prepared an assessment report dated April 2018 which concluded that:

> *…The Department does not consider in this instance the wider benefits of the proposal in terms of reducing the amount of waste going to landfill and the creation of electricity outweigh short, medium and long-term impacts and risks associated with the proposal.*
>
> *On balance, the Department concludes the application is not consistent with the objects of the EP&A Act, is not in the public interest and should be refused.*

The assessment report and the development application were referred to the Independent Planning Commission (**IPC**) for determination. The IPC, as part of its assessment of the development application, met with the Department, the Applicant and Blacktown and Penrith City Councils, visited the site and conducted a public meeting on 14 May 2018. The IPC invited written submissions following the public meeting and the Applicant on 21 May 2018 lodged a Response to the Department's Assessment Report. At this time, the Applicant identified that it would be willing to remove floc waste as an element of the proposed waste stream but did not formally amend the development application to reflect this change.

The IPC determined the development application on 19 July 2018 by way of refusal. The IPC found that:

- *the applicant's predicted modelling…was based on data that is not representative of the actual waste streams proposed to be treated at the Facility;*
- *there is insufficient evidence that the pollution control technologies are capable of appropriately managing emissions… and would be agnostic to the composition of the project's waste stream…*
- *there is uncertainty in relation to air quality, and the relationship between air quality impacts and water quality impacts in the locality…*
- *as a result, there is uncertainty in relation to the human health risks and site suitability…*
- *it is not satisfied that the project is consistent with …objects of the EP&A Act…*
- *the project is not in the public interest…*

Following this decision, TNG filed a Class 1 Appeal in the Land and Environment Court of NSW against the IPC's refusal of the development application and the proceedings are identified as matter No. 2019/13009 (*The Next Generation (NSW) Pty Ltd v Independent Planning Commission and Blacktown City Council*).

On 16 January 2020, TNG filed an Amended Notice of Motion with the Land and Environment Court seeking to amend SSD 6236 on the following grounds:

- A reduced annual throughput of a nominal 300,000 tonnes per annum, and encompassing a broader range of fuel components;
- Amendments to the design and layout of the proposed EfW facility; and
- Amendments to the proposed waste sources.

On 18 February 2020, Justice Moore handed down judgment on the Notice of Motion and refused TNG leave to amend SSD 6236 as outlined above on the basis that the amendments proposed collectively constituted a 'fresh DA'.

Noting the judgement handed down by Moore J, this request for SEARs represents a new application that is reflective of the scale of an EfW Facility with a capacity of 300,000 tonnes per annum. Further detail on the scale and proposed elements of the new EfW Facility are detailed in this request.

COMPARATIVE DIFFERENCES BETWEEN SSD 6236 AND THE PROJECT

The Project as presented in this request for SEARs has been informed by the reasons for refusal of SSD 6236 as detailed above, and the differences between the Project (the subject of this request for SEARs) and SSD 6236 (as determined by the IPC) are detailed below:

- Reduction in the identified volume of residual waste to be thermally treated from a nominal throughput of 552,500 tonnes per annum to 300,000 tonnes per annum and associated reduction in scale of the buildings on site – excluding the stack;
- Revision of the residual waste stream including the exclusion of material such as Floc, chromate treated timber and the inclusion of alternate fuel source such as Municipal Waste Organics Output (**MWOO**);
- Project definition brief that encompasses a broader range of fuel components more closely approximating the refuse derived fuel (**RDF**) as currently used at the reference facility at Ferrybridge, United Kingdom;

- A modified design exterior and site layout to reflect the scale of the Project (refer to **Figure 7** and **Figure 8**);
- The addition of a bottom ash treatment facility. Bottom ash generated from the combustion of fuel could potentially be treated for reuse in the construction industry or as cover material. Should the treated materials not be suitable for aggregate use, it would be disposed at an appropriately licensed landfill;
- The addition of a flue gas residue stabilisation process. This ensures that treatment of residues from the Flue gas treatment system will be combined on site with cement (which then becomes concrete) in a sealed system. The addition of cement to the flue gas treatment residue stabilises and immobilises all contaminants allowing it to be handled and landfilled safely;
- Additional quality assurance processes both on and offsite to ensure consistency of fuel composition and the exclusion of prohibited materials. These measures include a Code of Practice, contractual requirements and in-house inspection, audit and management processes to ensure consistency and quality of fuel; and
- Incorporation of a Visitor and Education Centre to be used as an education resource concerning environmental matters.

The Applicant has separately lodged a development application with Blacktown City Council (the Council) to subdivide Lot 1 and Lot 2 in DP 1145808 and to deliver a new access road within the industrial estate, create new industrial allotments and undertake site preparation works which would be able to accommodate future industrial activities on proposed Lot 13. This subdivision application will proceed independent of the Project.

Table 1 provides a high-level comparison between the original EFW proposal and the Project detailed in this request for SEARs

Table 1 Summary of Amendments

Project Item	**Original EIS**	**Amended EIS**	**The Project**
Land Description	Lots 1, 2, 3 & 4 DP 1145808	Part Lots 1 & 2, Lot 3 DP 11445808	Part Lots 1 & 2, Lot 3 DP 1145808 (Proposed 13 & Lot 3 in DP 1145808 – DA19-01184).
Subdivision	11 industrial lots	3 lots	Deleted as subdivision and creation of access roads to be undertaken as part of DA 19-01184 currently before Blacktown City Council.
Technical Design Capacity	1.35M tonnes per annum	1.35M tonnes per annum	329,400 tonnes per annum
Facility Processing Volumes (per annum)	Thermal treatment of maximum 1.35M tonnes per annum of residual waste fuels.	Thermal treatment of a maximum of 1.105M tonnes per annum of residual waste fuels. Implemented over two phases of 552,500 tonnes. Note: In the final RTS report it was clarified that the application had been amended to one phase	Thermal treatment of 300,000 tonnes per annum of residual waste fuels.

Project Item	Original EIS	Amended EIS	The Project
		capable of treating 552,000 tonnes	
Technology Engineering	Concept Definition Report prepared by Fichtner.	Project Definition Brief prepared by Ramboll.	Project Definition Brief to be prepared by HZI.
Design Fuel	Inconsistent design fuels identified in EIS, Fichtner Concept Report and Waste Management Report	Consistent Design Fuel profile adopted across all technical reports.	Consistent Design Fuel profile to be adopted across all technical reports. The Design Fuel profile excludes floc, metal treated timber and includes MWOO.
Waste Stream	Bottom Ash Boiler Ash Air Pollution Control Ash Pyrolytic Gas	Bottom Ash Boiler Ash Air Pollution Control Ash Pyrolytic Gas	Bottom Ash Air Pollution Control Ash Boiler Ash Ferrous Material Residue Liquid Effluent
Chemical Profile of Design Fuel	Difference in the design fuel profile, contributed to inconsistencies in the chemical profile of the design fuel.	As above, removing the Fichtner report has allowed for adoption of a consistent chemical profile.	The change to the RDF and Code of Conduct will provide certainty of fuel source and adoption of a consistent chemical profile.
Waste Outputs	Fichtner Design Report: - Bottom Ash: 321,000 - APC: 51,700 tpa	Ramboll Definition Brief: - Bottom Ash: 400,000 - APC: No change	HZI Definition Brief: - Bottom Ash: 73,800 with aggregates separated and recycled - APC: to be less than 51,700 tpa, the exact figure will be finalised at the EIS stage.
Waste Output – Reuse	Proposed re-use of ash materials as road base or similar.	Does not propose the reuse of any ash or residue material.	Does not propose the reuse of any ash however any aggregates or metals that can be recovered will be and then repurposed or recycled. Flue gas treatment residue is to be stabilised on site and then disposed of to an

Project Item	Original EIS	Amended EIS	The Project
			appropriately licensed facility.
Vehicle Movements	454 vehicles per day	614 vehicles per day: - 110 private cars - 504 trucks	166 vehicles per day: - 86 private cars - 80 trucks
Parking Numbers and Layout	40 parking spaces, 2 car parks	42 parking spaces, 3 car parks	44 parking spaces, access from Honeycomb Drive
Greenhouse Gas Emissions	Net positive CO_2 (i.e. emissions diverted), eliminating 13.6 to 17.1 Mt CO_2-e over the life of the development	Net positive CO_2 (i.e. emissions diverted), eliminating 13.6 to 17.1 Mt CO_2-e over the life of the development	Net positive CO_2 (i.e. emissions diverted), eliminating 12.2 to 13.6 Mt CO_2-e over a 30-year period
In-Stack Emissions	Emission rates based on IED limits.	Used in-stack emissions data for existing operating EfW facilities. Final RTS detailed use of Continuous Emissions Monitoring System.	Implemented Continuous Emissions Monitoring System a combination of the most stringent in-stack concentration limits from NSW POEO (Clean Air) Regulations and IED limits.
Flu Gas Treatment	Selective Non-Catalytic Reduction (**SCNR**)	Optimised SNCR design to reduce NO_x emissions	Optimised SNCR design to reduce NO_x emissions
Proof of Performance Framework	Not specified	Proof Performance Framework developed to support implementation and testing of facility before full operation commences.	Proof Performance Framework developed to support implementation and testing of facility before full operation commences.
Job Creation	55 operational jobs 240 construction jobs	55 operational jobs 500 construction jobs	43 operational jobs 500 construction jobs
Fuel Feedstock	- Chute Residual Waste (CRW); - Construction and Demolition (C&D); - Commercial and Industrial (C&I); - Steel Shredding Waste (Floc); - Paper Pulp;	- CRW; - C&D; - C&I; - Wood Waste; - Floc Waste; - Paper Pulp; - Glass Recovery; - Garden Organics;	- C&I; - C&D; - Paper Pulp; - GO; - AWT; - MRF; and - Municipal Waste

Project Item	Original EIS	Amended EIS	The Project
	- Glass Recovery Waste; - Garden Organics (GO); - Alternative Waste Treatment (AWT); and - Material Recovery Facility (MRF) waste residual.	- AWT; and - MRF.	Organic Outputs (MWOO).

KEY ENVIRONMENTAL ISSUES

An environmental risk screening exercise has been undertaken for the Project and is included in this request for SEARs. This screening exercise has taken into consideration the likelihood of an environmental impact occurring and the consequence of that impact should it not be mitigated. The likelihood and consequence of each impact have been combined through a screening matrix to establish the likely significance of the issue for the environmental assessment of the Project. This screening assessment considered potential impacts on both the natural and built environment. The key environmental assessment issues identified for detailed assessment during the preparation of the EIS include:

- Air quality in relation to emissions from the operation of the EfW Facility with consideration to background ambient conditions;
- Health risks associated with air emissions during the operational phase of the Project;
- Compliance with the NSW Energy from Waste Policy Statement during design and operation, including whilst sourcing the supply of feedstock;
- Waste generation in relation to the types and quantities of waste generated during the construction and operation of the Project including re-use and/or disposal options for bottom ash and flue gas treatment residue (**FGTR**);
- Traffic and transport in relation to potential impacts to the road network from construction and operational traffic'
- Visual and landscape character impacts as a result of the introduction of new built form;
- Hazard and risk in relation to fire and the storage, handling, transportation and disposal of FGTR generated from the operation of the Project;
- Social and economic impacts including the potential benefits relating to increased employment opportunities and amenity impacts;
- Noise and vibration from construction and operational activities
- Soils and water impacts in relation to contamination, stormwater and wastewater management during construction and operation and erosion and sedimentation control during construction;
- Aircraft safety risk due to plume rise from the vent stack;
- Green House Gas (**GHG**) emissions generated by the Project;
- Sustainability in design; and
- Cumulative impacts during construction and operation.

Other factors that will also be considered in the EIS are:

- Heritage impacts, both in relation to Aboriginal and non-Aboriginal heritage; and
- Biodiversity including potential impacts to threatened species.

As part of the preparation of the EIS, further assessments will be carried out to define the potential environmental impacts of the Project. Mitigation and management measures would be identified to avoid or minimise potential impacts on the natural and built environment during construction and operation of the Project.

CONCLUSION

TNG is seeking approval for the Project under Division 4.7 of the EP&A Act. This request for SEARs provides a preliminary assessment of the environmental and planning considerations to guide the preparation of SEARs for the preparation of an EIS.

In assessing the Project, the key focus is the avoidance and minimisation of impacts on the environment and the community. The assessment will identify mitigation and management measures to minimise impacts on the natural and built environment during construction and operation of the Project. Consultation with stakeholders and the local community will be an important part of informing and designing the Project and will be progressed as the application develops.

It is requested that DPIE confirm the Project as SSD and issue SEARs to enable an EIS to be prepared and development application submitted.

1. INTRODUCTION

In accordance with Part 4 of the Environmental Planning and Assessment Act 1979 (**EP&A Act**), this report forms a request for Secretary's Environmental Assessment Requirements (**SEARs**) to inform the assessment of a proposed development at Honeycomb Drive, Eastern Creek. The SEARs will inform the assessment requirements to populate the Environmental Impact Statement (**EIS**) for the proposed development of an Electricity Generating Facility, referred to as The Next Generation Energy from Waste Facility, to be subsequently lodged as part of an SSDA with the NSW Department of Planning, Industry & Environment (**DPIE**).

Energy from Waste (**EfW**) is a process of thermally treating residual waste fuels to generate electricity and ultimately reduce waste to landfill. TNG's proposed EfW Facility is intended to divert up to 300,000 tonnes of residual waste from landfill in the Sydney Metropolitan Area and generate electricity for up to 36,000 homes. The purpose of this report is to provide information to support the request to the Secretary to assist in identifying the SEARs for the preparation of an Environmental Impact Statement (**EIS**) for the proposed development.

The TNG EfW Facility is proposed to be constructed on Part Lot's 1 & 2 and Lot 3 in DP 1145808 within the Eastern Creek Industrial Estate, Eastern Creek (**the Site**). Part Lot's 1 & 2 are the subject of a development application for subdivision submitted to Blacktown City Council (**Council**) (DA 19-01184) and the Site is identified as proposed Lot 13 and Lot 3 in DP 1145808. The broader site (Lots 1 and 2 in DP 1145808) supports an established waste recovery facility and material processing centre and landfill known as the Eastern Creek Recycling Ecology Park & Landfill (previously known as Genesis Xero Waste). The landfill is conducted within a former quarry and accepts as landfill materials that cannot be reused or recycled.

Clause 20 of Schedule 1, of *State Environmental Planning Policy (State and Regional Development) 2011* (**SRD SEPP**) identifies that development for the purpose of 'electricity generating works and heat or co-generation' to be State significant development (**SSD**) if:

> *'Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) that has a capital investment value of more than $30 million'*

The works for the proposed EfW Facility has a capital investment value (**CIV**), as defined under clause 3 of the *Environmental Planning and Assessment Regulation 2000*, (**EP&A Regulations**) of $290,000,000. This cost is based on the approved EfW project in Rockingham, Western Australia. The Project is appropriately characterised as SSD and approval will be sought via a development application for SSD to the DPIE. The Minister for Planning and Public Spaces is the consent authority.

This report represents a formal request for SEARs in respect of the proposed EfW Facility and includes a description of the Project and an overview of the statutory framework against which it will be assessed. It also identifies key issues in relation to the Project and the scope of studies proposed to be undertaken to inform the EIS. This report aims to provide sufficient information about the Project to allow the Secretary to issue SEARs for the EIS which will be used to inform the assessment and determination of the Project in accordance with Division 4.1 of the EP&A Act and Schedule 2 of the EP&A Regulations.

1.1. PROJECT CONTEXT AND LOCATION

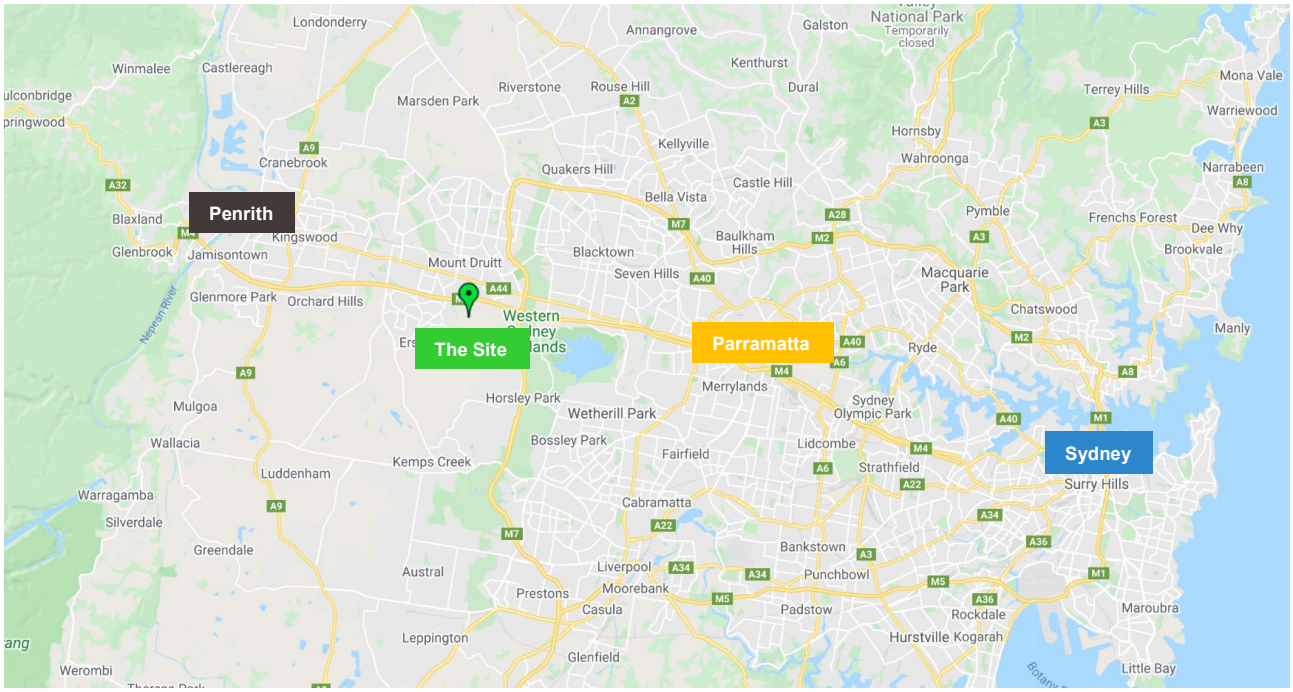
1.1.1. Project Site

The Site is located on Honeycomb Drive, Eastern Creek and is situated in the area known as the M7 Business Hub, a major employment hub for Western Sydney. A development application for the subdivision of Lots 1 and 2 in DP 1145808 to create 4 industrial Torrens title lots and associated works is currently under assessment with the Council as DA 19-01184. The Project will be sited on proposed Lot 13 and part of Lot 3 DP 1145808.

The Site is situated on the side of a valley at an elevation varying between 50 metre and 85 metres above mean sea level, topography is sloping from north to south down towards the Ropes Creek Tributary with some undulations in various directions

The Site is located within the Eastern Creek Precinct of the Western Sydney Employment Area (**WSEA**) which is strategically located in Central Western Sydney, approximately 36 kilometres (**km**) from the Sydney central business district (**CBD**), 18 km west of Parramatta and 12 km east of Penrith. The Eastern Creek Precinct is located west of the corner of the M4 Motorway and Wallgrove Road, where the M4 Motorway intersects the M7 Motorway (**Figure 1**).

Figure 1 Regional Context



Source: Nearmap, April 2020

Land uses in the surrounding locality include residential, commercial, industrial developments, small rural and rural residential allotments, unimproved greenfield sites with varying levels of vegetative cover and environmental constraints. A disused animal quarantine station, lawn cemetery and crematorium, and the Minchinbury industrial and residential area are located to the north of the M4 Motorway. Land to the west forms part of the Ropes Creek regional open space corridor and is located within the adjoining Penrith local government area (**LGA**).

The Site is in the Blacktown LGA. Land to the east of Wallgrove Road is characterised by a north-south green belt, providing open space, a range of recreational opportunities and a visual and physical break between areas of urban development, including the Prospect Reservoir (**Figure 2**).

Figure 2 Local Context

Source: Urbis, 2019

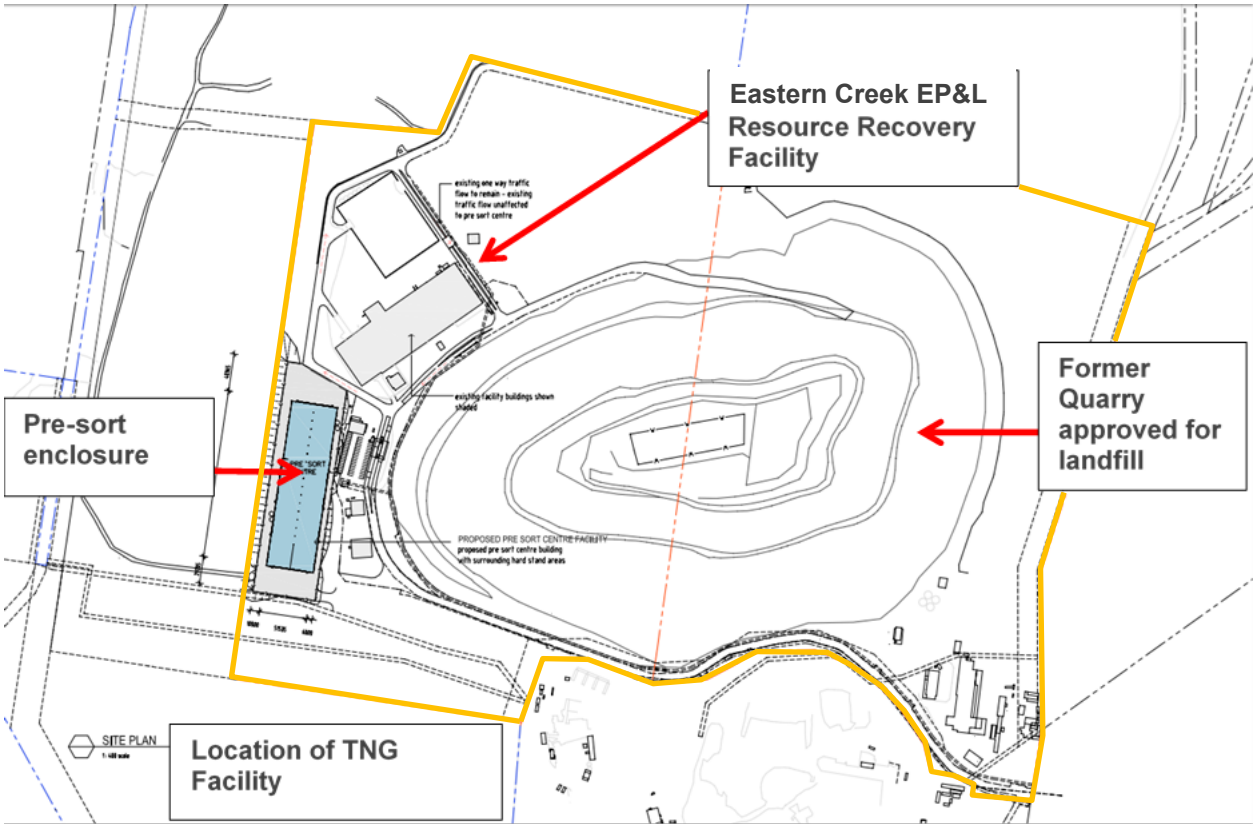
1.1.2. The Eastern Creek Recycling Ecology Park & Landfill

The Site of the proposed TNG EfW Facility is part of a larger landholding on which the Eastern Creek Recycling Ecology Park & Landfill is located (**the broader site**). The broader site is legally described as Lots 1, 2 and 3 in DP 1145808 and Lot 8 in DP 1200048. A detailed survey is provided in **Appendix A**. The Bingo Industries Ltd Corporate Group (**Bingo Group**) currently operate the Eastern Creek Recycling Ecology Park & Landfill which is a state-of-the-art construction & demolition, and commercial & industrial waste material processing centre and landfill facility. The layout of the facility is shown on **Figure 3.**

The waste material and processing centre and landfill operation commenced in November 2009 following the issuing of MO_06_139 to ThaQuarry Pty Ltd and ACN 114 843 453 Pty Ltd to construct and operate a resource recovery facility and non-putrescible landfill facility at the former Pioneer Quarry site, Eastern Creek (Lot 1 DP 1145808 and Lot 8 DP 1200048). The operation includes:

- Waste Recovery Facility including materials processing centre (**MPC**) and green waste area;
- Rehabilitation of the quarry void via a Class 2 (non-putrescible) landfill;
- A total throughput of up to two million tonnes of material per calendar year;
- Landfilling of up to 700,000 tonnes of non-putrescible waste (including asbestos);
- Stockpiling of up to 50 tonnes of tyres at any one time; and
- Stockpiling of up to 20,000 tonnes of green waste at any one time.

Figure 3 Eastern Creek REP&L Resource & Recovery Facility



Source: Axis Architectural, 2019

1.1.3. Surrounding Land Use

The broader site is accessed via Honeycomb Drive at Eastern Creek. The M4 Motorway runs adjacent to the northern boundary of the broader site. Archbold Road forms the western boundary with a buffer of unoccupied land further to the west, open grazing land to the south and along part of the eastern boundary together with the Hanson Asphalt Batching Plant and the Hanson yard (**Hanson site**) (**Figure 4**).

Land adjoining the broader site is owned by the following entities as shown in (**Figure 4**):

- The Corporate Group Alexandria Landfill Pty Ltd;
- ThaQuarry Pty Ltd;
- Australand;
- Hanson;
- Jacfin;
- The Department of Planning, Industry and Environment; and
- Sargents.

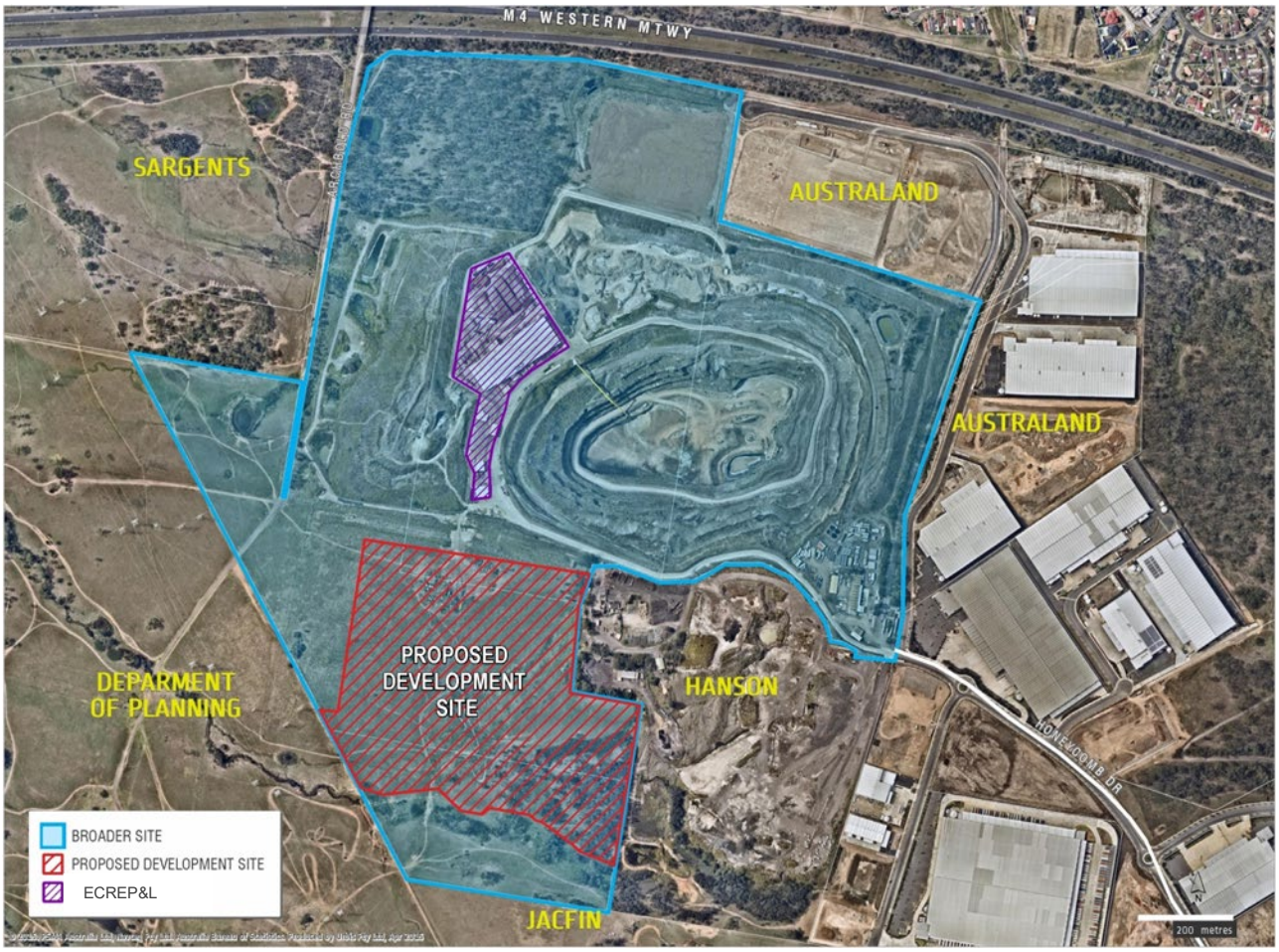
The adjoining land holdings are identified for potential redevelopment for higher end industrial and employment uses over the next decade under State Environmental Planning Policy (Western Sydney Employment Area) 2009 (**SEPP WSEA**).

The closest residential receivers to the Eastern Creek Recycling Ecology Park & Landfill site are:

- Minchinbury – approximately one km from the northern boundary of the broader site; and
- Erskine Park – approximately one km west of the broader site.

These localities have been developed as low-density residential housing areas, characterised by single- and two-story dwelling houses with private open space and areas of public recreation and open space.

Figure 4 Surrounding Land Ownership



Source: Urbis, 2019

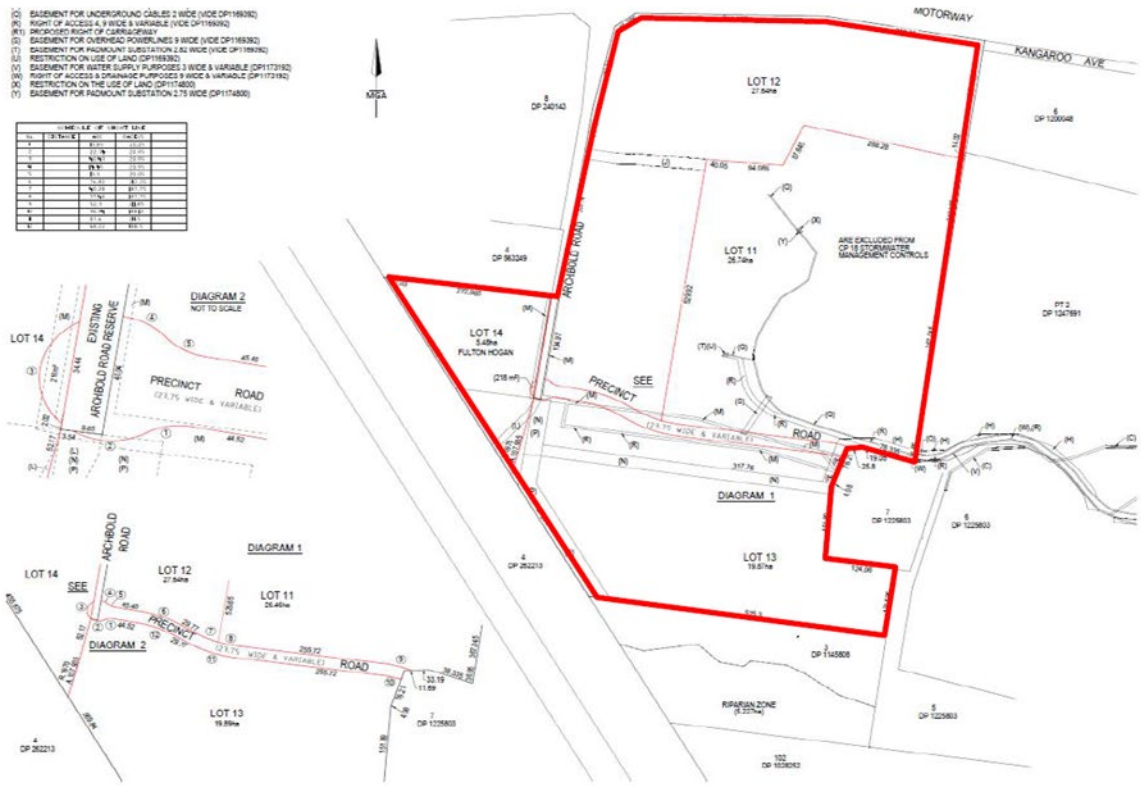
1.1.4. Development Application DA 19-01184

DA 19-01184 was lodged on the 16 August 2019 with the Council and is currently under assessment seeking approval for the following:

- Subdivision of Lot 1 and 2 in DP 1145808 into:
  - Lot 14 which comprises a new industrial lot associated with the approved development for an asphalt batching plant; and
  - 3 x residue lots (Lots 11, 12 and 13)
- The construction of a new 560 metre precinct road between Honeycomb Drive in the east and the future Archbold Road extension in the west;
- The provision of infrastructure; and
- Associated civil and landscaping works.

The proposed land subdivision will allow for the construction of the precinct road and ancillary works to accommodate services for the industrial estate and provide access to the proposed EfW Facility, the subject of this request for SEARs, and in anticipation for future development applications for development and use of the adjacent industrial land serviced by the precinct road. The proposed subdivision is shown in **Figure 5**.

Figure 5 DA 19-01184 Proposed Plan of Subdivision



Source: Ethos Urban, 2019

1.2. PROJECT NEED

The introduction of the Chinese National Sword Policy in 2018 has resulted in significant ramifications for the way Australia now manages its waste, having exported 1.25 million tonnes of recycled material to China in 2016-17. Sydney's population is currently projected to be 5.8 million residents by 2030, however as a city, residents are producing waste at a rate six times the current population growth. NSW remains the second highest per capita producer of waste in the world[1].

Waste within the Sydney metropolitan area is managed by three major landfill sites two capable of accepting putrescible waste – Lucas Heights and Woodlawn, and one non-organic waste plant at Eastern Creek, the Eastern Creek Recycling Ecology Park & Landfill[2]. The EPA estimates Sydney's remaining landfill capacity at 2.1 million tonnes per year. Landfill however remains an ineffective treatment of waste with its output of greenhouse gas (**GHG**) only capturing and flaring off anywhere between 60% and 70% of the emissions produced, as well as the potential environmental risk from runoff from landfill sites in terms of groundwater and land contamination.

The proposed EfW Facility represents a trusted and proven method of waste disposal in operation in many parts of the world. It is noted that the process of thermal waste-to-energy plants is particularly popular in Europe where 450 facilities are currently operating which have the capacity to process up to 73 million tonnes of waste a year, according to the Confederation of European Waste-to-Energy Plants.

This report presents an EfW Facility that would have the capacity to provide electricity to the NSW power grid for up to 36,000 homes in Western Sydney. Preliminary GHG investigations undertaken by ERM has estimated the Project would have a net positive GHG impact, potentially eliminating over a 30-year period between 12.2 and 13.6 Mt Co2-e. The emission intensity for electricity generated from waste incineration is significantly lower than that derived from the current NSW electricity grid. Similarly, by removing

[1] *Energy from waste' technology / Portfolio Committee No. 6 – Planning and Environment [Sydney, NSW.]: The Committee, 2018*

[2] https://www.smh.com.au/national/nsw/what-sydney-is-really-throwing-in-the-rubbish-20190812-p52gae.html

biodegradable wastes from the landfill, a significant reduction in emissions of methane from the decomposition of landfill waste will also be avoided.

The Council of Australian Government's August 2019 decision to ban the export of all Australian waste by 2022 represents a unique challenge that when combined with population growth highlights a need to address waste through additional and alternative means beyond those in place today.

The use of EfW technology can be complementary to reduction, reuse and recycling goals under the NSW waste hierarchy rather than as a means of replacing these waste treatment streams. Similarly, EfW technology can deliver an alternative source of electricity that is capable of a net positive GHG impact and further reducing landfill reliance within NSW. The Project represents a development that can be considered in the interests of the community and as part of the solution to the ongoing waste crisis within NSW.

1.3. THE APPLICANT

The Applicant is The Next Generation NSW Pty Ltd (**TNG**). TNG is a stand-alone company owned by the Eastern Creek Land Trust (**ECLT**). ECLT has contracted to own the Site of the proposed EfW facility.

Formerly part of the Dial A Dump Industries Group, TNG no longer owns or operates waste management facilities or has commercial dealings with waste or the processing or disposal of waste.

TNG is not proposing that it, or any associated entity, operate the proposed EfW Facility. As the landowner, TNG is seeking planning approval for an EfW facility to be constructed and operated within the Site.

1.4. PROJECT OBJECTIVES

The core project objective is to construct and operate an EfW facility. The proposed EfW Facility will have a technological capacity to process up to 329,400 tonnes of residual waste fuels for which there is no higher order or economic use. The main objectives of the Project are to:

- offer a viable alternative to the burning of fossil fuels by utilising a green and renewable energy source capable of servicing approximately 36,000 homes through the export of 31.9 MW energy;
- deliver a net positive Greenhouse Gas effect, eliminating over a 30-year period between 12.2 to 13.6 Mt CO2-e;
- reduce the demand for landfill in Metropolitan Sydney;
- provide New South Wales with the highest standard of EfW technology that compliments the *EPA NSW Energy from Waste Policy* utilising technology that is tried and proven and assists in the delivery of the targets of *NSW Renewable Action Plan*;
- create a consistent source of green energy back into the NSW electricity grid;
- create an employment generating land use, consistent with the objectives and intentions of the Eastern Creek Precinct within the broader WSEA; and
- retain land with high conservation value.

Additionally, the Project supports the objectives of the State significant employment land as outlined within SEPP WSEA in that it:

- promotes the economic use of land;
- reflects a coordinated approach to planning by clustering compatible land uses involved in the waste recovery and management industry allowing for economic efficiencies, securing long term delivery of jobs to the local area;
- seeks to create additional employment within the WSEA, directly employing 43 staff during operation phase and up to 500 during construction phase;
- promotes positive environmental goals through the reduction of GHG emissions and leachate associated with landfill operations;
- is compatible with established land uses on the immediately adjacent sites; and
- It seeks to provide a safe, clean and reliable form of energy generation for Metropolitan Sydney and contributes to alternative energy sources other than the burning of fossil fuels.

1.5. PROJECT OVERVIEW

Key features of the Project are outlined below and would be confirmed as part of the EIS following design development.

1.5.1. Process Overview

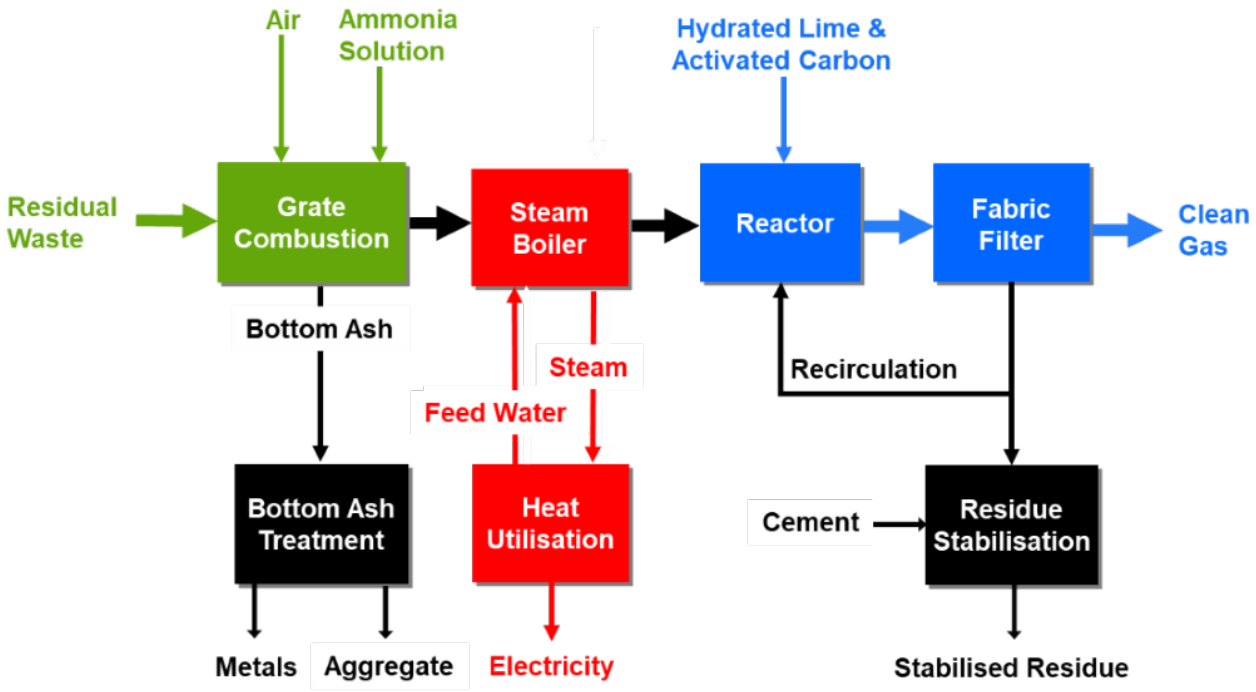
The Project involves the construction and operation of an EfW Facility. Energy recovery from waste forms part of the waste, resource recovery framework adopted and implemented by the NSW EPA. The proposed EfW Facility:

- will only accept suitable and eligible fuel sources from authorised third parties; and
- will utilise moving grate incinerator technology fed by one combustion line and associated boiler, utilising air cooled condenser (**ACC**) units, flue gas treatment systems and associated residue and reagent storage silos and tanks, emissions stack and associated emissions monitoring systems and steam turbines and generator housed within a turbine hall powered by a diesel generator.

Moving grate technology has been selected based on its capacity to handle a wide range of fuel types. While other elements of the technology have been selected to respond to achieve the highest possible level of environmental performance.

An overview of the EfW process is shown in **Figure 6** below which depicts a basic schematic diagram of the operational process (single stream) of the proposed EfW Facility.

Figure 6 Schematic Process Diagram for a Single Stream of Processing



Source: HZI, 2020

1.5.2. Fuel Feedstock

The design of the proposed EfW Facility allows for efficient operation between a net calorific value (**NCV**) of 12.23 and 9. At an NCV of 9, the facility may process up to 300,000 tpa. At an NCV of 12.23, the Facility can operate with as little as 240,000 tpa. Based on the nominal processing volume of residual waste fuels of 300,000 tonnes per annum the facility will operate with an NCV of 9.

Accordingly, the design fuel mix has been determined using the waste sources that would be available to TNG today, however the technology employed allows for significant flexibility in composition and quantity of material to accommodate for changes in waste management in future years.

The moving grate system offers the greatest flexibility in the range of waste fuels that may be processed at the EfW Facility. The following fuel types have been identified as the main sources of fuel:

- Commercial and Industrial (**C&I**);
- Construction and Demolition (**C&D**);
- Paper Pulp;
- Garden Organics (**GO**);
- Alternative Waste Treatment (**AWT**);
- Material Recovery Facility (**MRF**) waste residual; and
- Municipal Waste Organic Outputs (**MWOO**).

Waste streams not to be targeted for the purpose of recovery by thermal processes under the Project include:

- Bulky/ drop off household fuels and other municipal fuels such as street sweepings;
- Commercial and industrial fuel types that are not considered to be appropriate feedstocks, such as medical fuels;
- Source separated household recycling streams; and
- Prescribed industrial fuels (e.g. special wastes, medical wastes).

Only business waste (such as paper, cardboard and packaging manufacturers) that comply with the EfW Facility's acceptance criteria will be targeted as an input feedstock.

Materials such as asbestos, contaminated soils, chemicals and lead paint, PVC fittings, CCA treated timber and lead painted timber, dangerous goods; metals, batteries and floc waste; and clinical/medical waste will be the subject of rigorous exclusion methods and subjected to constant and ongoing audit and review to ensure exclusion. TNG proposes a system of mandated processing requirements which must be applied to waste before it will qualify as an RDF. The carrying out of the processes may be manual or automated but must involve the following outcomes:

1. Actions to reduce the nominal average size of material intended to be RDF
2. Actions to remove for recycling, the following:
    a. non-combustible materials;
    b. aggregates brick concrete sand and soil; and
    c. ferrous and non-ferrous metals, including items such as batteries, fire extinguishers, gas cylinders, motor parts, etc.
3. Remove for alternative disposal methods, the following:
    a. asbestos;
    b. treated wood waste;
    c. medical waste;
    d. chemical or radioactive waste; and
    e. PVC.

1.5.3. Residue Classifications and Disposal

The proposed EfW Facility would generate the following waste streams:

Table 2 Estimated Waste Generation

Waste Stream	Volume (Worst Case)	Destination
Bottom Ash	400,000 t/pa	Landfill
Residues (incl. APC and Boiler Ash)	51,700 t/pa	Authorised landfill only
Ferrous Material	Variable dependant on fuel stock	Reuse/ recycling
Liquid Effluent	N/A achieves balanced reuse	Water balance achieved

Bottom Ash

Bottom ash is the burnt-out residue from the combustion process. Bottom ash from the grate is quenched with water and moved by conveyor to the enclosed ash storage bunker where it is stored prior to being transported off-site. The conveyor passes under a magnetic separator to remove ferrous materials.

Air Pollution Control Ash

Flue Gas Treatment (**FGT**) residue, also known as Air Pollution Control (**APC**) residues, comprise fine particles of ash and residues from the FGT process. APC residue is collected in bag filters and will contain fly ash and reaction products from the hydrated lime scrubber and spent activated carbon.

Due to the heavy metals involved in FGT, this material is classified as hazardous waste. FGT is required to be treated before disposal to landfill. It will be stored in dedicated enclosed silos located adjacent to the flue gas area before being treated on-site with the addition of concrete blocks and then to transported to an appropriate off-site facility, in line with relevant hazardous waste legislation.

Boiler Ash

The characterisation of boiler ash is dependent upon in which boiler pass it is accumulated in. Boiler ash of the horizontal pass will be conservatively disposed of with the APC residues. The composition of the ash from the first vertical pass is similar as the bottom ash and can be disposed of with the latter.

Ferrous Material Residue

Ferrous metals will be removed from the bottom ash by means of magnetic separators and discharged to into bins which are then transported of-site to metal recycler.

Liquid Effluent

Liquid effluents will be produced from the boiler water treatment system and from the boiler blow-down. All boiler blow-down and liquid effluent produced will be fed to the ash discharger via the process water system. Under normal operating conditions effluents are returned to the EfW Facility for re-use. As such, most of the liquid effluent produced on-site will either evaporate or be absorbed into the ash for transport off-site.

Liquid effluent will be collected in a storage tank to balance the amounts generated and disposed of to the ash quench. As a consequence of this reuse there will be no need to dispose of liquid effluent generated through the thermal treatment process.

The 329,400 tonnes per annum technical capacity of the proposed EfW Facility represents the maximum potential scenario for operation. **Table 1** provides a summary of the waste by-products associated with the operation of the proposed EfW Facility using the design fuel input to achieve an NCV of 8.9 MJ/kg based on 8,000 hours of operation a year. The nominal maximum throughput per year will be 300,000 tonnes per annum.

1.5.4. Reference Facilities

Moving grate technology is tried and proven and has capacity to treat a wide range of residual waste materials. In selecting and designing the proposed EfW Facility a number of operating plants were reviewed for their performance in relation to feedstock, outputs (ash and residue) and emissions profiles.

These reference facilities utilise a grate system and process residual waste fuels from construction and demolition (**C&D**); commercial and industrial (**C&I**); some Municipal waste/general wastes (**MSW**) and wood wastes. A summary of the reference facilities reviewed for the purpose of the Project is provided in **Table 2**. The proposed EfW Facility has been included in the list for comparison purposes. In regard to a specific reference facility of which the processing method and specific waste fuels will be directly compared to, the EIS will present information on the final definition and make up of waste streams to enable comparisons to be made with reference facilities presented in the EIS. The nominated reference facility and the analysis in the EIS will include a direct comparison of the waste streams that are processed and a comparison of what is proposed for the EfW Facility.

As shown in **Table 3**, no two plants are exactly the same in terms of the volumes of waste treated or typical profile. However, the European experience with EfW has been that pre-processed waste materials received from external sources has been sorted prior to arriving at the facility and information relating to its waste declaration/identification is “lost” and cannot be tracked back to its origin.

As such, it is not possible to declare the initial origin of the waste nor the exact composition concerning C&D, C&I, being processed by the European facilities. Nevertheless, when considering the relevant aspects for the design of an EfW plant (mainly the physical and chemical waste composition) it is possible to demonstrate that the Project would operate well within the range of comparable facilities.

Table 3 Reference Facilities and TNG

Facility	Commission Year	Wasted Volumes Treated (tpa/combustion line)	Fuel Mix	Technology/ Supplier	APC
TNG, Australia		1 x 300,000	C&I; C&D, some MSW, MWOO	Grate, HZI	Semi dry (lime)
Grossraschen, Denmark (DE)	2008	1 x 246,000	C&I; C&D	Grate, AEE	Semi dry (lime)<LAB
Heringen, DE	2009	2 x 148,500	C&I; C&D, some MSW	Grate, AEE	Semi dry (lime), LAB
Premnitz, DE	2008	1 x 150,000	C&I; C&D	Grate, AEE	Semi dry (lime), LUhr
Hannover, DE	2005	2 x 140,000	C&I; C&D, some MSW	Grate, AEE	Semi dry (lime), LAB
Knapsack, DE	2009	2 x 150,000	C&I; C&D	Grate, AEE	Semi dry (lime), LUhr
Ferrybridge, DE	2015	2 x 256,000	C&I; C&D, some MSW, wood waste	Grate, HZI	Semi dry (lime), HZI
Riverside, DE	2011	3 x 195,000	MSW; C&D	Grate, HZI	Semi dry (lime), HZI
Kwinana, Australia	Approved 2019 (Not yet Operational)	1 x 300,000	C&I; C&D, some MSW, MWOO	Grate, HZI	Semi dry (lime)

What is evident from the reference plants reviewed in designing the proposed EfW Facility is the variation in the feedstock, which is demonstrative of the technological capacity to handle variation in waste fuel composition.

While there is no EfW plant operating elsewhere in the world that has an exact replica fuel profile as that proposed by TNG all relevant design parameters of the Project are well within comparable limits of the reference facilities which are successfully operating. The EIS will in presenting a reference facility using comparable technology will present information on definition and make up of waste and waste streams used in the reference facility (to demonstrate the similarity in feed stock) and so provide an understanding of the emissions and how they will relate to the Project. This material as it relates to the reference facility will be presented in the EIS. The methodology undertaken during the Air Quality Impact Assessment (**AQIA**) to inform this is detailed in Section 8.1.2.

1.5.5. Architectural Design

Preliminary architectural designs have been prepared at this early stage by Krikis Tayler Architects. A high standard of visual and environmental quality has been assured in the design of the proposed EfW Facility. The initial design incorporated careful materials selection and appropriately sited the development to minimise visual impact from the public domain and sensitive land uses. The Site's topography assists in reducing the perceived bulk and scale of the proposed built form with the proposed stack located at a low point of the Site to reduce the overall impact.

1.6. PROJECT BENEFITS

The Project represents a positive development outcome for the Site for the following reasons:

- The proposed EfW Facility will deliver a safe, clean and reliable form of energy generation for Metropolitan Sydney now and in the future for up to 36,000 homes;
- The proposed EfW Facility will provide a means of waste management resulting in improved management or reduction for the need for landfill in the Metropolitan Sydney;
- The proposed EfW Facility provides a sustainable solution to part of Sydney's growing waste generation;
- The proposed EfW Facility is estimated to result in a net positive greenhouse gas outcome eliminating the emission of approximately 12.2 to 13.6 Mt Co2-e from landfill over a 30-year;
- No adverse impacts will be experienced by residential properties as the development is well separated from residential areas.
- The Project is in the public interest as it will generate in the order of 500 direct construction jobs and 43 new operational jobs; and
- The proposed EfW Facility will contribute to energy security and diversity by providing additional low carbon, renewable electricity generating capacity, using unsalvageable and uneconomic residual Fuel which would otherwise be landfilled.

2. ALTERNATIVES CONSIDERED

2.1. ALTERNATIVE ONE: DO NOTHING

The diversion of waste from landfill, reducing the potential for methane emissions, while also providing a form of low carbon, renewable energy, is now recognised by the NSW Government as making an important contribution to the reducing of waste levels within the state.

It is therefore considered that the 'Do Nothing' scenario or business as usual is not appropriate given the established need for new sources of electricity generation, including a need for low carbon generation. The alternative to the proposed EfW Facility proceeding would be continued reliance on coal fire generation for electricity generation and operation of traditional landfill waste management operations which have been found to be inefficient as a long-term sustainable solution to Sydney's expanding population and waste generation.

The selection of the Site for the Project is directly related to its proximity to the M4 and M7 Motorways and the direct synergies between the Project and the adjoining Eastern Creek Recycling Ecology Park & Landfill operation which will provide a percentage of the waste fuels.

Other factors supporting the selection of the Site includes:

- It's proximate location in relation to the residual waste fuel sources available in the Western Sydney region;
- The topography of the land allows for the tipping hall to be considerably higher than the floor waste storage bunker without requiring extensive volume of fill material to achieve this;
- Availability of existing supporting infrastructure including:
    - connection to the grid - less than 1.5kms;
    - availability of water; and
    - availability of natural gas supply directly to the Site;
- Proximity to Eastern Creek Recycling Ecology Park & Landfill to maximise efficiencies with this facility;
- Opportunity for shared infrastructure with the Eastern Creek Recycling Ecology Park & Landfill, including roads;
- Access to a pool of skilled labour for operations and maintenance; and
- Separation from sensitive residential receivers.

The residual waste fuel availability and waste hierarchy analysis undertaken in preparing this request for SEARs reviewed eligible residual waste fuel availability that can be used as RDF in the proposed EfW Facility.

Looking at both the volume of waste currently landfilled in New South Wales and forecasts regarding volume of landfilled waste in the near future, there is a clear demand and need for energy recovery facilities in New South Wales as an alternative to residual waste being landfilled.

Given the proximity, availability and capacity of road links associated with the Precinct, the Site can access a range of potential waste sources across Western Sydney.

For these reasons, no alternative sites were considered for the proposed EfW Facility.

2.2. ALTERNATIVE TWO: PLANT LOCATION AND LAYOUT

Whilst there were a range of options available for the specific location of the proposed EfW Facility within the broader site, close consideration and evaluation during the feasibility and design development stage was given to the proposed location.

Consideration included:

- Known site constraints including the site topography, location of the landfill, and proximity to land zoned E2 Environmental Conservation;
- Environmental appraisal which informed the concept layout of the proposed EfW Facility;
- Proximity to Eastern Creek Recycling Ecology Park & Landfill operation;
- Maximum possible distance separation to residential properties in the region; and
- Connection to the Grid.

Initial air quality, noise, transport, ecological and archaeological constraints appraisals were undertaken to inform the selection of the location of various plant items within the Site. This included identification of key receptors and key site constraints (both physical and environmental) and initial modelling to inform whether the specific location of the plant would generate noise or emissions that may be experienced by specific receptors. These initial assessments will inform the studies that will accompany the preparation of the EIS.

The capacity of the location to share infrastructure with the Eastern Creek Recycling Ecology Park & Landfill was also an important consideration. The selected location allows use of the existing estate road from Honeycomb Drive and potentially other shared facilities and services over the lifetime of the two developments. Additionally, proximity to the Transgrid substation and use of the Transgrid easement makes the location ideal for the generation of electricity, saving on cable distances and electricity loss from transporting to the grid.

2.3. ALTERNATIVE THREE: SELECTION OF PREFERRED THERMAL TREATMENT TECHNOLOGY

There are several alternative technologies available for EfW Facilities including external kilns, fluidised beds, gasification and pyrolysis, plasma gasification and moving grate technology.

Given the combined objective the Project primarily as an electricity generating station but also as a waste solution, moving grate technology is considered the most suitable due to its reliability and performance in relation to energy generation and its robustness to manage a range of residual waste fuels with varying NCV while experiencing minimal wear.

The appointed technology provider Hitachi Zosen INOVA (**HZI**) has developed and operated numerous moving grate EfW plants around the world and is experienced in this technology. HZI is a leading global supplier for EfW plants with more than 500 reference projects worldwide and experience in different plant configurations, capacities, fuels, national standards, and high efficiency concepts.

Newly developed systems for improved combustion performance have been tested HZI in reference plants prior to being offered to the market. The systems include treatment as follows:

- The water-cooled grate has been in operation on various plants since 1994;
- The flow optimised swirl injection of secondary air has been in operation since 1996. Today this system has become a standard in all new plants;
- Flue gas recirculation was introduced in 1985 and is now in use in more than 40 thermal waste treatment plants;
- The semi-dry flue gas treatment system was first installed in 1998. It has since been installed in various thermal waste treatment plants; and
- The additive dosing (activated carbon, hydrated lime) was first applied in 1988 for adsorption of organic compounds and mercury in flue gas. This system has been continuously optimised and is now in operation in various thermal waste treatment plants throughout the world.

Whilst there are various forms of energy from waste operations, moving grate technology is a tried and tested technology. Alternative combustion techniques are available but do not have the same number of reference facilities and in some cases, technology has been withdrawn from commercial application.

Other technologies that have achieved a degree of commercial development are gasification technologies, but these tend to rely on a modular form and so are not suited to large scale commercial facilities and are less efficient in converting the waste feedstock into electricity than moving grate technology over a range of different fuel types. This is an important consideration both in relation to achieving compliance with the waste hierarchy and commercially given the Project will be operated as a commercial facility.

For the reasons set out above, and to ensure fuel mix has been carefully considered for the proposed EfW Facility, the selected technology is a reciprocating grate system (a type of moving grate system).

The proposed EfW Facility, as presented in this report, is the result of a consideration of alternatives and design evolution process in accordance with the hierarchy avoid, reduce and, if possible, reuse. This has included identifying best available technology (**BAT**) and avoiding or reducing potential environmental impacts by design.

3. PROJECT DESCRIPTION

Key elements detailing the Projects construction and operation are detailed in the following sections. These details will be described in further detail and confirmed within the EIS along with finalised standard operating scenarios, operational hours and maintenance protocols.

3.1. PLANT LAYOUT AND CONCEPT DESIGN

An indicative plant layout design is presented in **Figure 9** and **Figure 10**. The plant layout and location have been developed taking into account the relationship of the facility with the broader site and the Eastern Creek Recycling Ecology Park & Landfill, as detailed in Section 2.2.

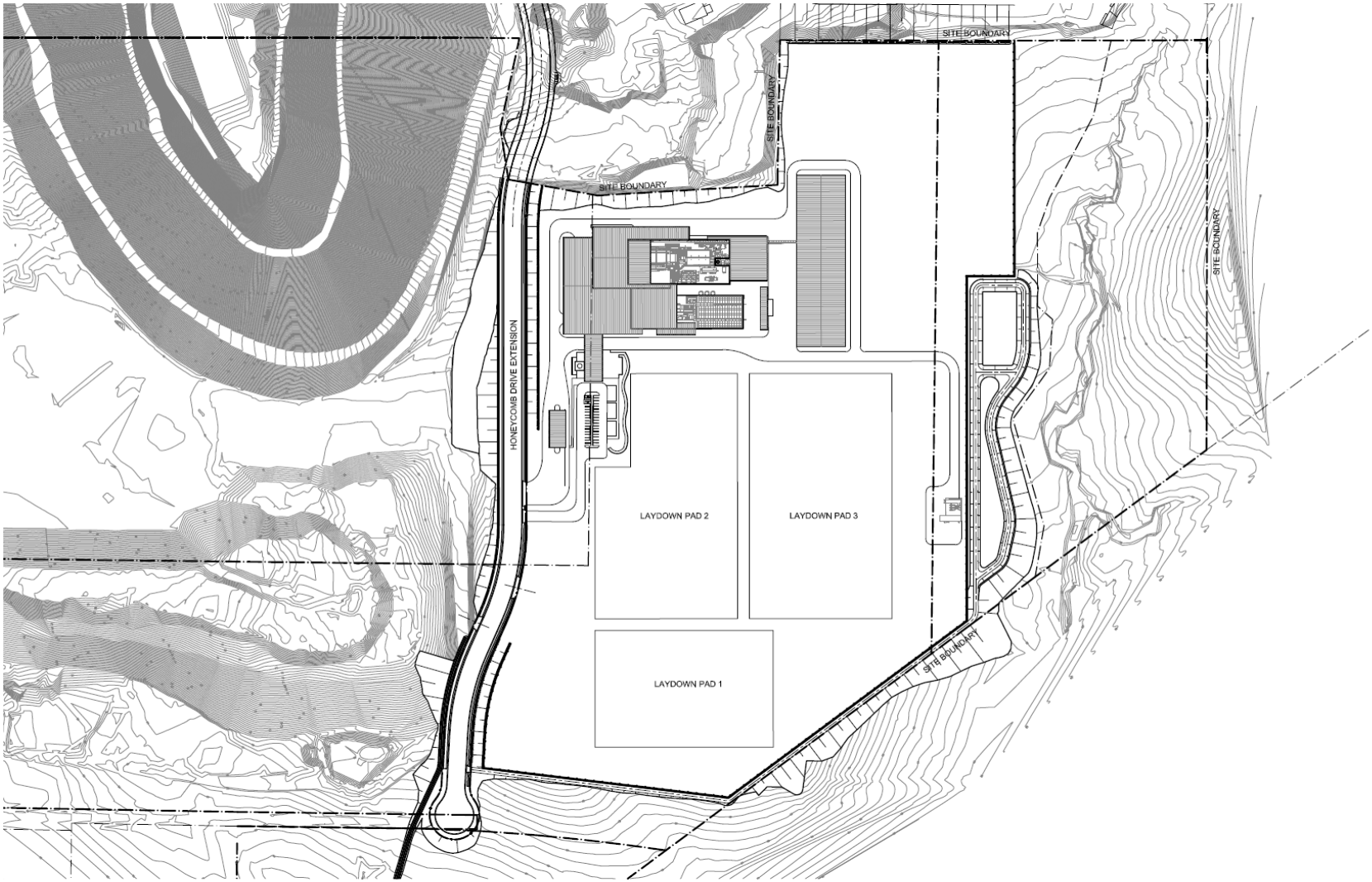
The proposed EfW Facility includes the following operational components:

- Tipping hall and fuel storage;
- Waste bunker;
- Combustion line 1;
- One independent boiler;
- Flue gas treatment systems;
- 100-metre-high Stack;
- Turbine, air cooled condenser;
- Bottom ash treatment facility;
- Flue gas residue stabilisation process;
- Associated auxiliary equipment (including two emergency generators);
- Control room;
- Workshop; office and amenities;
- Visitor and education centre; and
- Laydown areas.

The construction of the EfW Facility will be undertaken over two main phases:

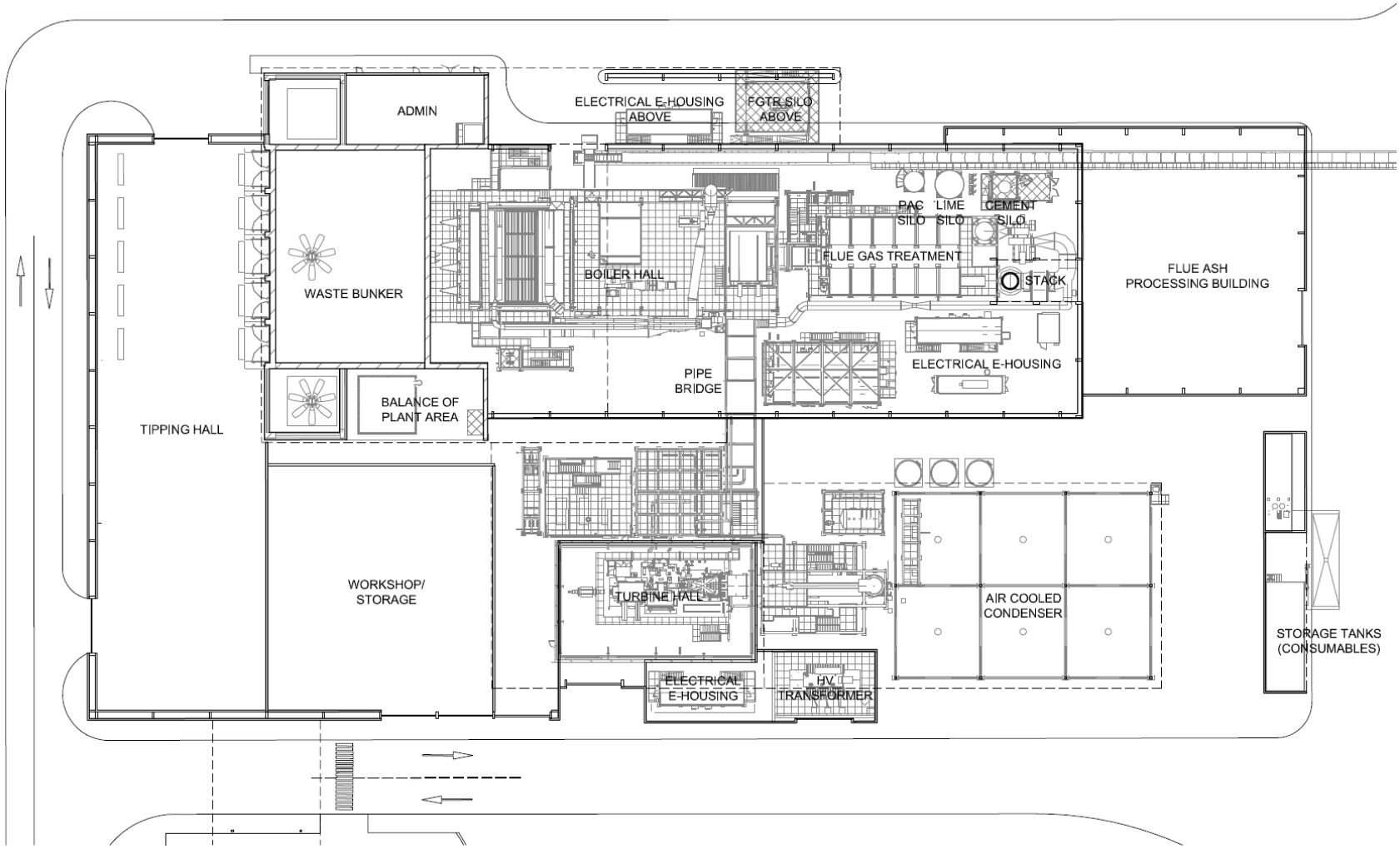
- **Construction Enabling Works**: site/ground preparation and civil infrastructure and services; and
- **Main Construction Works**: Structural works.

Figure 7 Proposed Site Masterplan



Source: Krikis Tayler Architects, 2019

Figure 8 Ground Floor Plan



Source: Krikis Tayler Architects, 2019

3.2. CONSTRUCTION ACTIVITIES

3.2.1. Construction Enabling Works

The first stage of construction works is proposed to include the following:

- Site preparation works;
- Bulk earthworks: cut and fill;
- Lay-down pads;
- Civil and stormwater management;
- Internal roads; and
- Services.

3.2.2. Main Construction Works

The second stage of construction will include the following:

- Site layout and building works;
- Weighbridges; and
- Community safety and fencing.

Construction is anticipated to take 36 months and generate approximately 500 jobs. Within the broadly defined two stages of construction, five sub-stages have been identified. **Table 4** sets out the expected sequence of construction works, at various times in the construction program some stages of work may be concurrent.

Table 4 Expected Sequence of Construction Works

Sub-stage	Description of Works/Equipment
Stage 1: Construction Enabling Works	
(a) Site establishment and clearance	Excavation machinery will be used to clear the site envelope including vegetation. Setting up of site fences and erosion control measures.
(b) Bulk excavation/ detailed excavation/ services lead in works	Machinery will be used to cut/ fill the site to create platforms for future building structures, as well as completing the bulk of excavation of the waste bunker. Removal of topsoil will be required using trucks. Trenching for utilities required to be brought into the Site will be undertaken by excavators.
Stage 2: Main Construction Works	
(a) Structure and concrete works	The structure will require two methods of construction. The slip form method requires concrete to be poured continuously over a period of 16 days. The second method is standard concrete placing methods, which will occur regularly throughout the structure period during standard hours.
(b) EfW technology provider plant installation and façade/ roofing instillation	During this period, the main plant and equipment to be used will be installed using cranes, EWP, mobile cranes, manitous, forklifts and the like. This will be a daily activity for a period of 16-18 months. Out of hours construction may occur on up to 45 days during the stage.

Sub-stage	Description of Works/Equipment
(c) Landscaping	Nearing completion of the Project the final fit out and landscaping stages will require minimal plant such as bob cats, backhoes and smaller excavators. Trucks importing topsoil may also be required.

3.3. OVERVIEW OF PROJECT OPERATION

The proposed EfW Facility has a design capacity to treat up to 329,400 tonnes of residual waste fuels. The EfW plant machinery will operate continuously, 24-hours a day and 7-days a week. Fuel will only be delivered to the Site at the operators specified times, where it will be unloaded and stored inside the bunker which has enough storage for 5 - 7 days of fuel load.

3.3.1. The Energy from Waste Process

The proposed EfW Facility, utilising thermal treatment technology generates electricity through the following steps:

- Waste fuel streams are sourced from authorised third parties and transported to the EfW Facility via road vehicle through the main entrance off the Precinct Road, to be constructed as part of DA 19-01184.
- Vehicles will proceed to the weighbridge where the quantity of incoming residual waste fuel will be checked and recorded. Following checking, vehicles will proceed to the tipping hall where they will be directed to a vacant tipping bay to discharge into the bunker.
- The waste bunker is used to even out use and supply, this is important to achieve homogenisation and to control “special fraction” materials including PVC waste, wood and plastics. Mixing and homogenisation of waste in the bunker prior to thermal treatment ensures that wastes containing chemicals such as chlorine are below 1 per cent per load.
- The design fuel is thoroughly mixed in the bunker and fed by crane. The crane feeds the independent line, in semi-automatic or automatic operation mode. Once in the feed hopper, the fuel load is pushed onto the grate by a ram feeder. Air is then used to combust waste in the furnace to hot gasses.
- The hot gases enter a boiler to convert liquid waste into steam.
- Steam is used in turbine generators to produce electricity for use in the operation of the EfW Facility, whilst the balance of the electricity is transferred to the grid.
- Gases from the combustion process are treated to very high cleaning specifications, through combustion control, gas treatment and filter bags.
- Cleaned combustion gases are discharged through the stack, while being continuously monitored.
- Ash residues from the boiler and filter bags are collected, solidified and disposed to appropriately licenced facilities.
- Bottom ash from the furnace is treated and any residual metals are separated and recycled.

The combustion process occurs on a moving grate allowing for mixing and advanced combustion by providing air directly through the grates. As the combustion occurs, temperatures will reach over 850°C for at least two seconds to guarantee full burnout which will destroy dioxins and furans that may be present in the waste fuel, or that were formed during the initial combustion process.

The combustion gases then enter the boiler tubes section to generate steam.

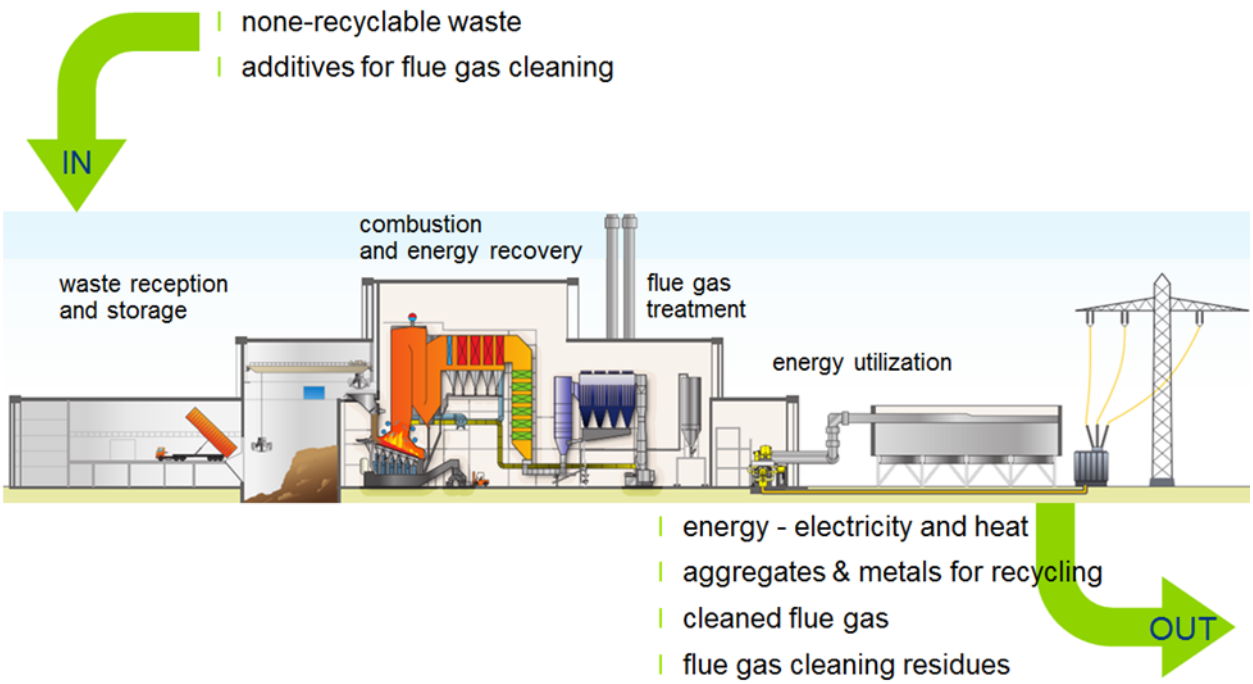
Ammonia or Urea is spray injected into the system to convert nitrogen oxides (**NOx**) back to elemental nitrogen and oxygen. Nitrogen oxide is a common combustion by-product.

Following this, the cooled gases then pass through the flue gas treatment system where lime and activated carbon are mixed to absorb trace heavy metals, acid compounds and trace dioxins and furans. These materials are then removed through a process of filtration as solid residues before the cleaned air passes inline emissions monitoring equipment and is released out of the stack.

Bottom ash, a solid post combustion material, drops into a water batch at the end of the moving grate, and is extracted via ram feeder. Typically, bottom ash is an inert fraction containing metals suitable for recycling, such as; glass, sand, gravel and un-combusted materials.

The intention is that the bottom ash from the combustion process will be collected, the metals recycled, and the remaining ash reused in road base and construction materials such as concrete. Fly Ash is collected along with FGRs and solidified with cement into concrete blocks, which can then be disposed into an approved waste landfill.

Figure 9 Overview of EfW Process



Source: HZI, 2016

The design for the proposed EfW Facility will include the following features:

- Moving grate technology to ensure waste and air mixing to optimise combustion;
- Flue Gases will achieve a minimum temperature of 850ºC for at least two seconds to completely combust organic compounds and destroy dioxins and furans;
- Flue Gas cooling via the economiser section designed to reduce potential for dioxins to re-form;
- Flue Gas recirculation to minimise nitrogen oxide generation in the furnace and assist with complete combustion;
- Online flue gas oxygen measurement to ensure enough oxygen for complete combustion; including a carbon monoxide analyser for further combustion tuning;
- Selective non-catalytic reduction methods with ammonia or urea injection and air mixing to reduce Nitrogen Oxide emissions;
- Burnt or hydrated lime injection systems to neutralise acid gases (HCl, HF and SO2);
- Activated carbon injection to absorb trace heavy metals and trace hydrocarbons such as dioxins and furans in the flue gases;
- Single stage bag filters to collect fly ash particulates, lime and activated carbon solid residue;
- Recirculation of the air pollution control residues to optimise reagent use and minimise solid waste;
- A modern certified continuous emissions monitoring system (**CEMS**) installed on the stack linked to emission control variables, with an installed live spare;
- Odour minimisation, including the tipping hall being a fully enclosed building maintained under negative pressure, with odorous air combusted in the boiler to minimise escape from the proposed EfW Facility;
- Recovery of metals from the bottom ash residues to promote recycling;
- Superior energy recovery efficiency from the residual waste fuel through the generation of combined heat and power (steam and electricity) when compared to standalone electricity generation; and
- Capability to reuse bottom ash as a replacement for natural aggregates such as sand and gravel following an appropriate treatment and approval process.

3.4. EMPLOYMENT

The construction works associated with the Project would generate approximately 500 jobs over the expected three-year period.

An experienced operator and maintainer would be contracted to oversee the implementation, operation and maintenance of the facility. TNG have begun early negotiations with an experienced operating team and the facility once operational would provide a total of 43 jobs.

3.5. PROPOSED HOURS

The proposed EfW Facility will operate 24 hours a day, seven days a week once completed, for a total of 8,000 hours per year. The facility will only be offline to allow for scheduled and periodic maintenance.

The flowing deliveries and pickups from the Site are anticipated:

- Incoming fuel stock: 24 hours, 7 days;
- Incoming management materials: 24 hours, 7 days;
- Outgoing waste (ash/residue): 12 hours, 6 days (6am – 6pm core hours with the potential for some to occur during 24/7 ops); and
- Miscellaneous deliveries (hydrated lime, activated carbon and other materials): 24 hours, 5 days a week.

3.6. CAPITAL INVESTMENT VALUE

The construction of the proposed EfW Facility has a CIV as defined under clause 3 of the EP&A Regulations, of $290,000,000.This cost is based on the approved Rockingham project and excludes civil works to be delivered as part of DA 19-01184, as detailed in Section 1.1.4.

A Quantity Surveyors Certificate of cost will be prepared to accompany the lodgement of a future EIS and development application for SSD.

4. COMMUNITY CONSULTATION AND ENGAGEMENT

TNG are committed to engaging in a transparent and robust consultation programme with stakeholders throughout all stages of the design and environmental impact assessment process. This is inclusive of local residents, businesses, members of the wider community, regulatory agencies, all levels of Government and other interest groups.

TNG have engaged Urbis to undertake engagement activities to inform the preparation of the EIS and to provide a framework for ongoing engagement activities throughout the future stages of the Projects development.

Within the initial stages of preparing for community consultation and developing a strategy, a range of activities have been undertaken to date including a review of projects in the energy recovery and industrial sectors to identify key issues likely to be raised by the community and regulatory agencies. This initial research has been utilised to inform the environmental issues addressed in Section 8 of this report. The environmental issues and assessment scopes identified in this report have been informed by:

- Consultation undertaken to date which included a Scoping Meeting held with the Department on 14 April 2020, the purpose of the meeting was to introduce the Project to the assessing team and inform the following:
    - Discussion on the relevant assessment pathway;
    - Preliminary discussion on the relevant matters to be considered in the EIS and determine what will be the appropriate level of assessment for each relevant issue;
    - Discussion on the proposed approach to community and stakeholder consultation and engagement during and after the current COVID-19 pandemic; and
    - Discuss how this document was to be adequately prepared, including documenting the results of engagement during scoping and the proposed approach to engagement during the EIS preparation phase.
- An additional Planning Focus Meeting held with members of the Department as well as the NSW Environment Protection Authority (**EPA**), NSW Health as well as representatives from both Blacktown and Penrith councils. The purpose of which was to:
    - Advise the relevant agencies of the intention to lodge the application;
    - Provide a detailed presentation on a briefing of the project and explain how this Project responds to the reasons for refusal of SSD 6236;
    - Discussion of key issues;
    - Community consultation strategy; and
    - Provide an open forum for the agencies to voice concerns or pose questions of the Project.
- A review of comparable projects proposed and approved in both NSW and interstate to identify key issues that underpinned regulatory assessment and community issues for those projects to ensure that similar issues (where relevant) are adequately accounted for and addressed in the design, EIS preparation and consultation strategy for the Project; and
- Lessons learnt from the previous SSD 6236 application and the subsequent refusal by the IPC, in particular key community issues and regulatory challenges and how these can be managed and addressed through design and assessment of the Project including ongoing performance and compliance management going forward.

4.1. CONSULTATION OBJECTIVES

TNG are committed to engaging with stakeholders throughout the entirety of the design and assessment process to identify potential or perceived impacts of the Project and ensure adequate control measures that avoid or mitigate against risks are identified and incorporated into the design. To achieve this objective, TNG will undertake consultation with the aim of providing stakeholders with an opportunity to have effective input by expressing their view and concerns.

The key objectives of consultation and engagement for the Project are to:

- To ensure that the current planning proposal for TNG's EfW Facility is clearly and effectively communicated to the local community and relevant stakeholders, including members of local governments and elected officials;
- To ensure there are adequate opportunities for all relevant stakeholders and the wider community to be engaged and informed about the Project, throughout the planning and construction processes;

- To ensure that the statutory exhibition processes are supported by consultation processes that provide opportunities for the community to raise issues, questions or concerns, and express their views to the Department and TNG;
- To ensure that the key steps and timelines in the planning process and opportunities for community input and involvement are well understood; and
- To ensure that the consultation process helps inform the Department on key local issues from the community's perspective and areas for TNG's response.

4.2. COMMUNITY AND STAKEHOLDER ENGAGEMENT

The Departments draft guidelines *Community and Stakeholder Engagement* (NSW DPE, 2017) provide direction to applicants on how to engage with the community and other stakeholders during the preparation of scoping reports and EIS for SSDA's.

TNG and Urbis intend to establish a consultation strategy informed by the above guideline, but also one sympathetic to the current climate as a result of COVID-19. Within the short term, traditional engagement strategies such as site visits, information centres and community events or feedback sessions are not readily available.

As a result, Urbis has prepared an online engagement strategy, which will be further developed and utilised during the community and stakeholder engagement for the proposed EfW Facility. Despite the ongoing pandemic, maintaining quality communications and operating with business as usual throughout COVID-19 is vital. As such web-based platforms, web-casting and online Q&A forum mean workshops and events are engagement opportunities that are still able to be utilised. There remains a number of opportunities to innovate to obtain stakeholder input, using a mix of the following techniques:

- Running online workshops and webinars on the platform Zoom, Skype or Microsoft Teams;
- Pre-reading: prior to each workshop, provide a short thought-starter for each participant so that they enter the online environment informed and ready to participate;
- Video content: video content shared pre- or in-workshops, to enable participants to see the site and surrounds (in lieu of site tours) and may include comparable sites; and
- Online reporting: online reporting or communiques between workshops, with hyperlinks to important content.

With the ongoing pandemic there remains uncertainty around the ability to engage in traditional consultation techniques. However, noting a decline in cases of the virus in NSW, consideration will be given to the possibility that more traditional engagement strategies are able to be utilised in the short to medium term. To this degree the following engagement program outlines a likely curriculum that could be undertaken by Urbis once SEARs have been issued and an engagement strategy is confirmed.

Educate and Inform:

- Review of issues raised in previous engagement and submissions;
- Project website;
- Social media information;
- Fact sheets and printed materials
- Temporary visitor and education centre to educate and inform; and
- 1800 and dedicated email.

Understand Concerns:

- Local area door knocks;
- Information sessions (including online as needed); and
- Briefings with interested stakeholders (list to be further refined once SEARs are issued)
    - Relevant local resident action groups
    - Total Environment Centre
    - Landowners - Eastern Creek precinct
    - Blacktown City Council
    - Penrith City Council
    - State Member for Mount Druitt
    - State Member for Blacktown
    - Local media: Blacktown Advocate, Mt Druitt Standard

Integrate Community and Agency Engagement

Upon the issuing of SEARs, Urbis and TNG will finalise and implement a community and stakeholder engagement strategy to not only inform the EIS, but provide all stakeholders and the wider community a platform to not only obtain information, but inform the overall design and assessment process by informing of any concerns. This will include a closed feedback loop with stakeholders and community.

5. STRATEGIC CONTEXT

The strategic policies and design guidelines that have been identified in the preparation of this request for SEARs include:

- Greater Sydney Region Plan: A Metropolis of Three Cities;
- Our Greater Sydney 2056: Western City District Plan; and
- Premiers Priorities.

The Project is consistent with the following planning strategies, Region and district plans and adopted management plans as detailed below.

5.1. GREATER SYDNEY REGION PLAN: A METROPOLIS OF THREE CITIES

The Greater Sydney Region Plan: A Metropolis of Three Cities (**the Region Plan**) provides the overarching strategic plan for growth and change in Sydney. It is a 20-year plan with a 40-year vision that seeks to transform Greater Sydney into a metropolis of three cities - the Western Parkland City, Central River City and Eastern Harbour City. It identifies key challenges facing Sydney including increasing the population to eight million by 2056, 817,000 new jobs and a requirement of 725,000 new homes by 2036. In the same vein as the former *A Plan for Growing Sydney*, the Region Plan provides 10 high level policy directions supported by 40 objectives that inform the District Plans, local strategic planning statements and future comprehensive local environmental plans.

Under the Region Plan, the Site is identified as being within the Central River City which is envisioned to grow substantially capitalising on its location close to the geographic centre of Greater Sydney. Unprecedented public and private investment is contributing to new transport and other infrastructure leading to a major transformation of the Central River City. Similar to the adjoining Western Parkland City, the Central River City will be established on the strength of the new international Western Sydney Airport and Badgerys Creek Aerotropolis. A key objective of the Central River City is to optimise infrastructure and business investment, employment and liveability outcomes.

The Region Plan identifies that the WSEA will be the single largest new employment space in the Sydney Metropolitan Area. Located on the intersection of the M7 and M4 Motorways near Eastern Creek, it will significantly expand the employment potential in this part of Sydney. The Region Plan identifies the WSEA as a region of strategic industrial importance due to its proximity to the Badgerys Creek Aerotropolis and proposed new transport infrastructure. The proposed EfW Facility directly addresses the objectives of the WSEA in that it will provide up to 500 jobs during construction, and up to 43 jobs during the operational phase of the Project.

Similarly, the Project is consistent with the liveable cities vision of the Region Plan which supports compatible land use development and sustainability outcomes. The proposed EfW Facility would employ a circular economy model which would provide an innovative environmental solution for residual wastes generated at the Eastern Creek Recycling Ecology Park & Landfill (and other sites), enhance energy security, divert waste from landfill (and increase the design life of landfills), reduce GHG emissions and provide employment within the Central River City.

5.2. CENTRAL CITY DISTRICT PLAN

The Central City District Plan (**District Plan**) is a 20-year plan to manage growth in the context of economic, social and environmental matters to implement the objectives of the Region Plan. The intent of the District Plan is to inform local strategic planning statements and local environmental plans, guiding the planning and support for growth and change across the Central City District.

The District Plan contains strategic directions, planning priorities and actions that seek to implement the objectives and strategies within the Region Plan at the district-level. The District Plan identifies the key centres, economic and employment locations, land release and urban renewal areas and existing and future transport infrastructure to deliver growth aspirations.

The Project is considered consistent with several the Planning Priorities set out in the District Plan, specifically those outlined within the Direction for Building an efficient City. The proposed EfW Facility addresses the following objectives of the District Plan:

- Objective 33: A low-carbon city contributes to net-zero emissions by 2050 and mitigates climate change;
- Objective 34: Energy and water flows are captured a, used and re-used; and
- Objective 35: More waste is re-used and recycled to support the development of a circular economy.

The proposed EfW Facility will contribute to these objectives by providing a renewable energy source leading to a reduction in GHG emissions, capturing energy from waste materials, reducing landfill, and emphasising the importance of receiving residual material from higher order reuse and recycling facilities and activities.

5.3. PREMIERS PRIORITIES

In addition to the above, the Project aligns with the NSW Government's Premier's Priorities which include 12 key areas including economic growth, provision of infrastructure, protection of vulnerable communities, improving education and environmental protection. The proposed development aligns with the following key priorities as they relate to the proposed development as discussed below.

Creating Jobs

The NSW Government identifies NSW as leading the nation on key economic indicators, whilst also acknowledging that more can be done to attract new jobs and businesses to the State. The State Government had targeted the creation of 150,000 new jobs in NSW by 2019, aiming to make the NSW economy as competitive as possible and therefore help create employment opportunities across the state. Whilst this jobs target was achieved in May 2016, the NSW Government is continuing to develop key initiatives that assist in the creation of jobs, such as creating jobs and apprenticeships for the construction sector to promote the strength and continued growth of the economy.

The Project directly benefits job creation and more widely provides an integrated approach to waste management while operating as an electricity generating facility. The Project will create approximately 500 new full-time equivalent jobs during the construction of the facility and a further 43 new full-time equivalent jobs once the facility is in operation.

Keeping our Environment Clean

The NSW Government has further committed to the reduction in volume of litter by 40% in NSW by 2020, identifying that up to $180 million is spent annually in the cleaning up of litter, on top of the environmental and social costs associated with it. The results of the 2017-2018 National Litter Index noted the Government had achieved a 37% reduction on the volume of litter in the state by 2018 and was on track to meet the target two years ahead of schedule.

Whilst the achieving of the 40% reduction is inevitable given the progress made through various government sponsored initiatives and programs, the government continues to push the agenda of reduction in waste with specific changes to the recycling and waste industry in NSW. With its 2018 change in domestic Policy, China, which accepted 1.25 million tonnes of recycled material from Australia in 2016-2017, has begun to enforce restrictions on the importation of recycled materials under its National Sword policy. This policy has impacted the global market for recyclable material, including the recyclable material that is currently collected in NSW. The NSW Government's response saw the establishment of an inter-government taskforce which has recommended of a number of long and short-term solutions to not only reduce waste in the State, but how it is treated and processed. This includes the encouragement of development applications for waste processing and recycling facilities to address the growing issue of recycling and waste treatment in NSW.

6. STATUTORY FRAMEWORK

6.1. ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

6.1.1. Overview

The EP&A Act establishes the framework for the assessment and approval of development and activities in NSW. The EP&A Act also facilities the making of environmental planning instruments which guide the way in which development should occur across the State, this is inclusive of State environmental planning policies (**SEPP**) and local environmental plans (**LEPs**).

Section 4.36 of the EP&A Act provides for a process where development can be declared SSD either by a SEPP or Ministerial order published in the Government Gazette. Section 4.37 of the EP&A Act provides that the Minister is the consent authority for SSD. Part 4, Division 4.7 of the EP&A Act sets out the provisions which apply to the assessment and determination of development applications for SSD. The Project is subject to section 4.38*Consent for State Significant Development*.

6.1.2. Permissibility

The Site is located on land to which SEPP WSEA applies. The Site is located on land zoned IN1 General Industrial under SEPP WSEA. The proposed land use for an EfW Facility is not identified as a permissible land use under the IN1 General Industrial zoning applying to the land.

Notwithstanding, the *State Environmental Planning Policy (Infrastructure) 2007* (**ISEPP**) aims to streamline the delivery of necessary services and infrastructure to communities through establishing alternate planning mechanisms. The ISEPP prevails over the local planning instrument and SEPP WSEA in relation to land use and zoning to facilitate the delivery of essential infrastructure.

Clause 34(4) of the ISEPP provides that:

> *…if, under any environmental planning instrument (including this Policy), development for the purpose of:*
>
> *(a) industry, or*
> *(b) a waste or resource management facility*
>
> *may be carried out on land with consent, development for the purpose of electricity generating works that generate energy from waste, or from gas generated by waste, may also be carried out by any person with consent on that land.*

SEPP WSEA identifies general industries and waste or resource management facilities to be permissible land uses with consent under the IN1 General Industrial zone. As such, in accordance with the provisions of clause 34(4) of the ISEPP, the proposed EfW Facility (which would comprise electricity generating works that generate energy from waste) is permissible with consent.

6.1.3. Planning Approval Pathway

Section 4.36 of the EP&A Act outlines development that is considered SSD. This section notes that a development can be declared SSD by an environmental planning instrument or by the NSW Minister for Planning. The *State Environmental Planning Policy (State and Regional Development) 2011* (**SRD SEPP**) identifies various types of development and sites upon which certain works are considered State significant development.

Schedule 1, Clause 20 of the SRD SEPP identifies development for the purpose of ‘electricity generating works and heat or co-generation’ to be SSD if:

> *‘Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) that has a capital investment value of more than $30 million’*

Similarly, Schedule 1, Clause 23(4) of the SRD SEPP denotes that development inclusive of ‘waste and resource management facilities’ are triggered as SSD if:

'Development for the purpose of resource waste incineration that handles more than 1,000 tonnes per year of waste'.

The works for the proposed EfW Facility has a CIV of $290,000,000 and a proposed annual throughput of 300,000 tonnes per annum. The Project is therefore characterised as SSD and approval will be sought via a development application for SSD to the DPIE. The Minister for Planning and Public Spaces is the consent authority.

6.2. STATE LEGISLATION

Additional NSW legislation that is applicable to the Project are detailed below in **Table 5**.

Table 5 Relevant NSW Legislation

Legislation	Relevant Requirements	Application to the Project
Biodiversity Conservation Act 2016 (**Biodiversity Act**)	The aim of the Biodiversity Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development.	Assessment of threatened species will be undertaken as part of the EIS for the Project. This assessment would determine whether separate approvals under the Biodiversity Act are required for the Project
NSW National Parks and Wildlife Act 1974 (**NPW Act**)	The NPW Act aims to prevent the unnecessary or unwarranted destruction of relics and the active protection and conservation of relics of high cultural significance. The provisions of the Act apply to both indigenous and non-indigenous relics.	Section 4.41 of the EP&A Act provides that SSD is exempt from the need for a section 90 permit for the removal of items of Aboriginal heritage. An archaeological assessment will be undertaken as part of the EIS to identify and minimise potential heritage impacts in relation to the Project.
NSW Heritage Act 1977 (**Heritage Act**)	The Heritage Act protects heritage items, sites and relics in NSW older than 50 years regardless of cultural heritage significance.	Section 4.41 of the EP&A Act, provide that SSD is exempt from the application of Division 8 of Part 6 of the Heritage Act.
NSW Roads Act 1973 (**Roads Act**)	Section 138 of the Roads Act requires the consent of the relevant roads authority Blacktown City Council or NSW Roads and Maritime Services (**RMS**) for work in, on, under or over a public road.	Any works proposed to a public road as part of the Project would require the relevant road authority. Consultation would be undertaken with the RMS and Blacktown City Council as relevant during the preparation of the EIS to ensure adequate consideration of potential issues affecting public roads within or surrounding the Site.
NSW Water Management Act 2000 (**WM Act**)	Under the WM Act, a licence would be required if water were to be extracted from a creek or if any waterways were to be realigned during construction.	Under section 4.41J of the EP&A Act approvals under sections 89, 90 or 91 of the WM Act are not required.

Legislation	Relevant Requirements	Application to the Project
NSW Rural Fires Act 1997 (**Rural Fires Act**)	The Rural Fires Act requires consideration of potential bush fire impacts on development at the planning assessment stage in order to protect people and property from the effects of bush fire. Section 100B requires a bush fire authority to be issued prior to undertaking certain types of development on bushfire prone land.	Section 4.41 of the EP&A Act, provides that SSD is exempt from the need for a bushfire safety authority under section 100B of the Rural Fires Act.
NSW Protection of the Environment Operations Act 1997 (**POEO Act**)	The POEO Act enforces licences and approvals formerly required under separate Acts relating to air, water and noise pollution, and waste management with a single integrated licence. Under Section 48 of the POEO Act, premise-based scheduled activities (as defined in Schedule 1 of the EP&A Act) require an Environment Protection Licence (**EPL**).	Part 3.1 Section 48 of the POEO Act notes that activities listed under Schedule 1 of the Act requires an EPL. As the proposal is listed under Schedule 1 as an Electricity generating works, generating more than 30 megawatts of electrical power, and a development for waste disposal (thermal treatment), the proposal will require an EPL. The general provisions of the POEO Act in relation to the control of pollution of the environment will apply to the Project. During both the construction and operation phase of the Project, appropriate management measures would be required in relation to the control of noise, dust, erosion and sedimentation, and stormwater discharge to ensure that the pollution control provisions of the POEO Act are satisfied.

6.3. STATE AND LOCAL POLICIES

6.3.1. State Environmental Planning Policy (Infrastructure) 2007

The ISEPP is the primary planning instrument addressing the provision and operation of infrastructure across NSW. The ISEPP provides planning pathways for various types of infrastructure within prescribed zones.

The ISEPP also includes provisions for traffic generating development and requires referral and concurrence of the RMS for certain development which is expected to generate significant traffic. Schedule 3 of the ISEPP identifies *'traffic generating development'* which must be referred to the RMS for concurrence. The schedule includes the construction and operation of an industrial use with an area of 20,000m^2 or more. Under Column 2, Schedule 3 and clause 104(2)(a) of the ISEPP the development is considered traffic generating development and requires concurrence from the TfNSW.

6.3.2. State Environmental Planning Policy (State and Regional Development) 2011

Schedule 1 of the SRD SEPP sets out development that is considered State significant development based on its size, location and value.

Clause 20 of Schedule 1, of the SRD SEPP identifies development for the purpose of '*electricity generating works and heat or co-generation*' to be SSD if it has a CIV of more than $30 million.

Similarly, Schedule 1, Clause 23(4) of the SRD SEPP denotes that development for '*waste and resource management facilities*' is considered as SSD if the facility incinerates more than 1,000 tonnes of waste per year.

The works for the proposed EfW Facility has a CIV of $290,000,000 and a proposed annual throughput of 300,000 tonnes per annum. The Project is therefore characterised as SSD and approval will be sought via a development application for SSD to the DPIE. The Minister for Planning and Public Spaces is the consent authority.

6.3.3. State Environmental Planning Policy No 33 – Hazardous and Offensive Development

State Environmental Planning Policy No 33 – Hazardous and Offensive Development (**SEPP 33**) requires the consent authority to consider whether an industrial proposal is a potentially hazardous or a potentially offensive industry. In doing so, the consent authority must consider the specific characteristics and circumstances of the development, its location and the way in which the proposed activity is to be carried out.

Any application to carry out potentially hazardous development must be supported by a preliminary hazard analysis (**PHA**).

The Project, if unregulated by mitigation measures, has the potential to be hazardous. As such, in accordance with the provisions of clause 12 of SEPP 33 a preliminary hazard analysis will be prepared as part of the EIS.

6.3.4. State Environmental Planning Policy No 55 – Remediation of Land

State Environmental Planning Policy No. 55 Remediation of Land (**SEPP 55**) applies to all land in NSW and aims to promote remediation of contaminated land for the purposes of reducing potential impacts on human health.

The Project is for the establishment and operation of an '*electricity generating facility*'. As the Site had a known site history of use for agricultural purposes a preliminary site investigation will be prepared having regard for Table 1 of the *Contaminated Land Planning Guidelines* during the preparation of the EIS.

6.3.5. State Environmental Planning Policy (Western Sydney Employment Area) 2009

SEPP WSEA applies to land within the WSEA and provides planning and development controls to guide the efficient release and development of land within eight key precincts.

SEPP WSEA zones land and establishes the key development controls and design principles as well as setting the framework for regional infrastructure contributions.

The Site is zoned IN1 – General Industrial under SEPP WSEA. Development for the purpose of "Industries (other than offensive or hazardous industries)" is permissible with consent.

The development is categorised as '*electricity generating works'* under the Standard Instrument LEP. This use is permissible under clause 34(1) of the ISEPP as electricity generating works are permitted to be carried out by any person within a prescribed industrial zoned, including IN1 General Industrial zoned land.

The development controls and principles contained in SEPP WSEA will be a key consideration in the design of the Project and would be considered in detail in the EIS.

6.3.6. State Environmental Planning Policy No 64 – Advertising and Signage

State Environmental Planning Policy No. 64 – Advertising and Signage (**SEPP 64**) will apply to the Project, where signage on the facades is visible from the surrounding road network.

A detailed assessment against SEPP 64 will be undertaken as part of the EIS process once a design for the facility including signage or signage zones have been finalised.

6.3.7. Blacktown Local Environmental Plan 2015

No planning controls in the Blacktown local environmental plan 2015 (**BLEP**) apply to the Site as the Site is subject to the provisions of SEPP WSEA. Notwithstanding, the aims of the BLEP would be considered in the EIS to demonstrate that the Project is consistent with the overall objectives of BLEP and will minimise impacts to surrounding land use and any sensitive receivers.

6.3.8. Blacktown Development Control Plan 2015

The Blacktown Development Control Plan 2015 (**BDCP**) supplements the provisions of the BLEP through detailed planning and design guidelines.

As the land is regulated by the deemed development control plan, *Eastern Creek Precinct Plan Stage 3* under clause 18 of the WSEA SEPP, the provisions of the BDCP are not relevant to the assessment of the Project.

Notwithstanding this, preparation of the EIS will have regard to the controls for the purpose of determining compatibility of the Project with the broader LGA, noting that sites within the immediate context will be developed in response to the provisions of the deemed DCP and likely future character will be a reflection of these primary controls.

The following sections of the DCP would, if not for the operation of the deemed DCP, relate to the Project:

- Part A: General Guidelines;
- Part E Industrial Zones;
- Part G: Site waste management and Minimisation;
- Part I Contaminated Land Guidelines; and
- Part J: Water Sensitive Urban Design and Integrated Water Cycle Management.

6.4. STATE AND INTERNATIONAL POLICY

6.4.1. NSW Energy from Waste Policy Statement 2015

The *NSW Energy from Waste Policy Statement 2015* identifies the relevant policy framework and principal criteria that apply to facilities in NSW that propose to thermally treat waste or waste-derived fuels for the recovery of energy, and in doing so, providing regulatory clarity to industry and the community. In accordance with Schedule 1 of the *POEO Act 1997*, thermal treatment means the processing of waste by burning, incineration, thermal oxidation, gasification, pyrolysis, plasma or other thermal treatment processes.

Under the NSW Energy from Waste Policy Statement, the Project is defined as an '*energy recovery facility*' as the Project would thermally treat waste-derived materials that fall outside of the low-risk 'eligible waste fuels' category. To ensure compliance with the NSW Energy from Waste Policy Statement, energy recovery facilities are required to implement current best practice techniques to ensure they meet specific technical, thermal efficient and resource recovery criteria. Additionally, any proposed energy recovery facility project must also undertake public consultation and adhere to the good neighbour principle.

TNG's proposed EfW Facility would be required to comply with all requirements set out within the NSW Energy from Waste Policy Statement. An assessment against this will be undertaken at the EIS stage.

6.4.2. NSW Waste Avoidance and Resource Recovery Strategy 2014-2021

The Waste Avoidance and Resource Recovery Strategy 2014-2021 (**WARR Strategy**) provides the strategic direction for future waste management and resource recovery activities in NSW. The priorities for waste reform were determined by the NSW Government in NSW 2021: A plan to make NSW number one.

The WARR Strategy aims to drive the efficient use of resources, reduce the environmental impact of waste and improve the well-being of the NSW environment, community and economy. The WARR Strategy sets out long-term targets and provides a framework for the development of various implementation plans.

The WARR Strategy provides a clear framework for waste management to 2021-2022 and provides an opportunity for NSW to continue to increase recycling across all waste streams. The Project would assist the NSW government in meeting the 75% waste diverted from landfill target through utilising residual waste not able to be reused or recycled to recover energy.

6.4.3. NSW Protection of the Environmental Operations (Waste) Regulations 2014

The Protection of the Environment Operations (Waste) Regulation 2014 (**POEO Waste Regulation**) identifies the relevant provisions addressing the way waste is to be managed regarding storage, transportation and processing, as well as reporting and record keeping requirements for all waste facilities.

The POEO Waste Regulations allow the NSW EPA to issue 'resource recovery orders and exemptions' that allow for the strategic and beneficial reuse of waste either for land application or use as a fuel source. These regulations support the principle of 'wastes to resources' where the wastes are fit for beneficial reuse.

Resource recovery orders and exemptions are likely to be required for material processed at the EfW Facility and outputs such as bottom ash which are proposed to be reused for land application. Further consideration of the POEO Waste Regulation will be detailed within the EIS stage.

6.4.4. NSW Waste Classification Guidelines

The Waste Classification Guidelines (EPA, 2014) provide advice and direction on classifying waste to ensure that appropriate management and strategies of all waste types is achieved. Classifying wastes into groups that pose similar risks to the environment and human health facilitates their management and appropriate disposal, in accordance with the POEO Act and its associated regulations. The Waste Classification Guidelines would be relevant to the Project during both the construction and operational phases of the development. As noted above, given the output associated with the Project are likely to be used for further land application, it is imperative all waste produced from the Project be correctly classified to ensure its appropriate disposal.

6.4.5. European IPPC Bureau Industrial Emissions Directive and BREF

The Industrial Emissions Directive (IED 2010/75/EU) of the EU (adopted on 24 November 2010) is the predominant European Union instrument for regulating pollutant emissions from individual facilities. The IED was established to ensure a high level of protection of both human health and the environment through efforts to reduce harmful industrial emissions across the EU, with specific emphasis on the utilisation and implementation of Best Available Technologies (**BAT**).

The European IPPC Bureau is responsible for the exchange of information between EU Member States and industries on BAT and the preparation of BAT reference documents (otherwise known as BREFs) to assist in the efficient implementation of the IED across the EU.

Waste incineration (**WI**) facilities in the EU are governed under the IED. The BREF WI was adopted by the European IPPC Bureau under the IED in 2006 and is applicable to energy recovery plants. A revised BREF for establishing the BAT conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for WI was published by the European IPPC Bureau on the 12 November 2019. Consideration of this BREF will be included within the EIS for the proposed EfW Facility.

TNG has committed to designing the proposed EfW Facility to be consistent with the most recently available BREF for Waste Incineration Facilities under the European IPPC Bureau. It is the intention of TNG to include

a strict Code of Practice as part of the SSDA which will ensure the utilisation of BAT and adhere to Project to strict regulation in line with the European IPPC IED.

6.5. COMMONWEALTH PLANNING CONSIDERATIONS

6.5.1. Environmental Protection and Biodiversity Conservation Act 1999

The *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (**EPBC Act**) is the key Federal legislation that addresses environmental impact through seeking to protect matters of national environmental significance (NES). Matters of NES include:

- World heritage properties;
- National heritage places;
- Wetlands of international importance;
- Commonwealth-listed threatened species and ecological communities;
- Commonwealth-listed migratory species;
- Commonwealth marine areas;
- The Great Barrier Reef Marine Park;
- Nuclear actions; and
- Other matters, including:
    - the environment, where the action will be undertaken on Commonwealth land or will significantly affect Commonwealth land; and
    - significant impact on the environment, where the Commonwealth is proposing to take the action.

Under the EPBC Act, referral to the Commonwealth Minister for the Environment is required for proposed 'actions' (including projects, developments and activities), which have the potential to have a significant impact on a matter of national environmental significance.

A review of the proposed works has been undertaken and it is noted that the proposed EfW Facility will involve an action affecting a listed threatened Ecological Community being the Cumberland Plain Woodland. Initial site surveys undertaken by Abel Ecology have noted the threatened ecological communities present on the Site are degraded remnants in Class 2/3 condition, with an understorey dominated by weeds (Class 2/3 condition indicated remnant or regenerating areas with weed invasion). As such, given the state of the two protected flora communities on the Site, no individual flora species listed under the relevant Act were surveyed, thus no Biodiversity Offset Strategy is required.

Despite the above, throughout the entire EIS process consideration will be given to the objectives of the EPBC Act.

7. PRELIMINARY ENVIRONMENTAL RISK SCREENING

Imperative to the scoping process of an SSD DA is undertaking preliminary identification of the likely environmental risks associated with the Project. TNG have undertaken an initial review of the likely issues for consideration within the EIS, with the aim of determining the likely level of assessment required to adequately address each environmental issue. The methodology that is detailed below in Section 7.1 is informed by the NSW DPIE's *Draft Environmental Impact Assessment Guidance Series June 2017* which informs the requirements for the initial scoping stages of the SSD process.

When undertaking the initial risk assessment, each potential environmental issue has been assessed against the risk screening, which is made up of the issue's likelihood to take place, its consequence, and the overall risk should that issue arise. This has then been assessed against the anticipated potential impact to any relevant stakeholders. It should be noted that while extensive community and stakeholder consultation will be undertaken prior to the EIS stage, specific data is not available as of yet, thus the impact to stakeholders has been assumed given the scale of the potential environmental issue and the risk is presents.

7.1. ENVIRONMENTAL RISK SCREENING METHODOLOGY

The assessment undertaken as part of the risk screening for the potential environmental issues associated with the Project was prepared in reference to the site-specific constraints and a review of the previous issues assessed as part of the previous EfW proposal over the site, SSD 6263.

As detailed above, the risk screening was assessed against an environmental issue's likelihood to take place, its consequence for taking place, and the risk associated with that issue taking place in the absence of adequate mitigation measures. Table 5 below highlights the risk screening matrix adopted to establish the likely risk of each environmental issue and thereby, the required level of assessment as part of the EIS process.

Table 6 Environmental Risk Screening Matrix

Likelihood of Effect	**Consequence of Unmitigated Effect**		
	Minor	**Moderate**	**Major**
Unlikely	Very Low	Low	Medium
Possible	Low	Medium	High
Likely	Medium	High	Very High

The risk screening is designed to ultimately identify the key issues, understand the associated risks and help develop an understanding of the level of assessment that will be required during the EIS stage. This not only assists the DPIE and relevant agencies in establishing the relevant SEARs requirements to populate the EIS, it also allows for the planning of relevant mitigation measures at an early stage of the SSD process.

As noted in Section 4, whilst detailed community and stakeholder engagement is yet to be undertaken, Table 6 below does include detail regarding the potential impact to stakeholders. Without detail from any previously undertaken stakeholder engagement, consideration based on known key issues is in relation to other similar projects have been utilised to define the level of interest and impact.

The outcomes of the preliminary screening process are presented in **Table 7** Mitigation measures will be developed during the assessment process and presented in detail in the EIS.

Table 7 Environmental Risk Screening Outcomes

Environmental Issue	Environmental Risk Screening			Potential Impact to Stakeholders	Resulting Level of Assessment
	Likelihood	Consequence	Risk		
Waste Resource Use & Management					
Residual/ Operational Waste Management	Likely	Major	Very High	High	Very High
Availability of Waste Streams/Fuels	Likely	Major	Very High	High	Very High
Construction Waste	Likely	Minor	Medium	Low	Low
Waste Policy					
Compliance with Applicable Policy During Construction and Operation	Likely	Major	Very High	High	Very High
Air Quality					
Operational Air Quality/ Stack Emissions	Likely	Major	Very High	High	Very High
Odour	Possible	Moderate	Medium	Medium	Medium
Construction Air Quality	Possible	Minor	Low	Low	Low
Human Health					
Operational Air Quality/ Stack Emissions	Likely	Major	Very High	High	Very High
Soil Contamination	Possible	Minor	Low	Low	Low
Noise and Vibration					
Construction Noise & Vibration	Likely	Minor	Medium	Medium	Medium
Operational Noise & Vibration	Likely	Minor	Medium	Medium	Medium

Environmental Issue	Environmental Risk Screening			Potential Impact to Stakeholders	Resulting Level of Assessment
	Likelihood	Consequence	Risk		
Road Traffic Noise	Likely	Minor	Medium	Medium	Medium
Soils and Water					
Soil Health	Unlikely	Moderate	Low	Low	Low
Surface Water Flows & Quality	Likely	Minor	Medium	Low	Low
Groundwater	Possible	Minor	Low	Medium	Medium
Salinity	Unlikely	Moderate	Low	Low	Low
Surface & Stormwater Management	Possible	Minor	Low	Low	Low
Flooding	Unlikely	Minor	Low	Low	Low
Water Demands	Possible	Minor	Low	Low	Low
Traffic and Transport					
Construction Traffic	Likely	Moderate	High	Medium	Medium
Operational Traffic	Likely	Minor	Medium	High	High
Social & Economic					
Amenity Impact during Construction and Operation	Likely	Moderate	High	Medium	Medium
Surrounding Property and Land Value Impact	Unlikely	Moderate	Low	High	Medium
Creation of Employment Opportunities	Likely	Minor	Medium	Medium	Medium
Hazard & Risk					

Environmental Issue	Environmental Risk Screening			Potential Impact to Stakeholders	Resulting Level of Assessment
	Likelihood	Consequence	Risk		
Storage and Handling Hazardous Materials	Possible	Major	Moderate	Medium	Medium
Bushfire	Unlikely	Major	High	Medium	Medium
Flora & Fauna					
Vegetation Removal	Likely	Minor	Low	Low	Medium
Visual					
Visual Amenity	Likely	Major	Medium	High	High
Plume Rising	Likely	Moderate	Low	Low	Medium
Night Lighting	Likely	Minor	Low	Low	Low
Greenhouse Gas Emissions					
GHG Emissions	Likely	Minor	Medium	Medium	Medium
Airspace Operations					
Safe and Efficient Operation of Protected Airspace	Possible	Major	High	Medium	Medium
Stack Height and Plume Rising	Likely	Moderate	Low	Low	Medium
Wildlife Management: Bird Strike	Possible	Minor	Low	Low	Low
Aboriginal & non-Aboriginal Heritage					
Construction or Operational Impacts to Aboriginal Heritage	Unlikely	Moderate	Low	Low	Low
Construction or Operational Impacts to non-Aboriginal Heritage	Unlikely	Moderate	Low	Low	Low

8. ENVIRONMENTAL ISSUES

Upon completion of the preliminary environmental risk screening and detailed due diligence regarding site specific constraints and sensitivities, the following environmental issues have been identified. These issues, which will make up the environmental assessment undertaken within the EIS stage will be confirmed once SEARs have been issued by the DPIE and further detailed as the preparation of the EIS is progressed. Following the completion of the preliminary environmental risk screening, the relevant issues have been established into Key Issues and Other Issues, these include:

Key Issues

- Waste Resource Use, Policy & Management
- Air Quality
- Human Health
- Noise & Vibration
- Soils & Water
- Traffic & Transport
- Social & Economic
- Greenhouse Gas Emissions
- Visual Impact
- Hazard & Risk
- Flora & Fauna

Other Issues

- Airspace Operations
- Aboriginal & non-Aboriginal Heritage

For each of the above environmental aspects, detail regarding the existing environment, specific issues for consideration and the proposed assessment methodology within the EIS has been identified.

8.1. KEY ENVIRONMENTAL ISSUES

8.1.1. Waste Availability, Policy & Management

Existing Environment

In initial feasibility studies undertaken to inform the viability of the EfW Facility, TNG have undertaken a preliminary feedstock review to assess the overall market availability of potential feedstock sources in the NSW Metropolitan Levy Area. The results suggest that, in 2019, based on Waste Avoidance and Resource Recovery Strategy Progress Report 2017-18 data, approximately 5.5 million tonnes of suitable construction and demolition (**C&D**), municipal solid waste (**MSW**) and commercial and industrial (**C&I**) waste is sent to landfill each year in the Metropolitan Levy Area, and could be available to fuel the proposed EfW Facility at the proposed nominal rate of 300,000 tonnes per annum. This is in addition to the available waste streams associated with the Eastern Creek Recycling Ecology Park & Landfill adjacent to the proposed EfW Facility. This is material that is sent to landfill as the physical qualities of the material prevent it from being able to be reused or recycled further. The revised scale of the Project, represents a significant reduction in scale to the proposal originally submitted under SSD 6236, relies on waste that would otherwise be sent to landfill and is consistent with the *NSW Energy from Waste Policy Statement 2015* requirements and objectives. The Project will not and does not need to divert waste from otherwise productive recycling and reuse strategies.

Issues for Consideration

Within the assessment phase of the EIS, the following key considerations intent to be addressed:

- Residual waste;
- Management of incoming fuels:
    - Procedures for waste receipt and screening
    - Waste storage
- Availability of waste; and
- Waste outputs.

The following legislation and policies (detailed in Section 6.4) will inform and guide the assessment of the above considerations:

- The Protection of the Environment Operations (Waste) Regulation 2014
- The Waste Avoidance and Resource Recovery Strategy 2014-2021 (WARR Strategy)
- NSW Waste Classification Guidelines; and
- NSW Energy from Waste Policy Statement 2015.

The Project provides the opportunity for beneficial reuse through thermal treatment of residual waste thereby diverting these waste streams from landfill consistent with the WARR Strategy. The Project will be designed to meet the specific technical and thermal efficiency criteria in the NSW Energy from Waste Policy Statement and to demonstrate appropriate resource recovery consistent with the policy.

Proposed Assessment Methodology

The EIS will include several appendices demonstrate compliance with all relevant NSW policies and strategies. These would include a Feedstock Review, Proof of Performance and a Statement of Commitments to demonstrate conformance of the Project to the applicable waste policies. The EIS would include:

- Detail and assessment regarding the proposed fuel streams including characterisation and composition of quantities to be used within TNG EfW Facility, as well as environmentally appropriate management and disposal of operational biproduct;
- Assessment of the Project against all relevant NSW and International waste policy and strategies relating to the operation of an EfW Facility and the recommended BAT; and
- Demonstration that all fuel used within TNG EfW Facility is appropriately and legally sourced from contracted third parties and is made up of residual waste resources.

8.1.2. Air Quality

Existing Environment

To assess the potential impacts against the relevant air quality standards and criteria, it is necessary to have information in existing concentrations for the area in which the proposed EfW Facility could potentially contribute to these concentrations.

A number of monitoring stations operated by the former NSW Office of Environment and Heritage (**OEH**) and industry have been included in the below summary of the existing air quality conditions produced by Pacific Environment for the initial scoping stages of the Project. The following stations were analysed. The analysis will be updated in the preparation of the EIS:

- OEH Station at St Marys: PM_{10}, NO_x and O_3
- OEH Station at Prospect: SO_2 and CO
- Industrial Monitoring at Minchinbury: PM_{10}

Table 8 Summary of Adopted Background Concentration

Pollutant	Average Period	EPA Criterion	Adopted Background Concentration
PM_{10}[a]	Annual	25	19
	24 Hour	50	49
$PM_{2.5}$	Annual	8	7
	24 Hour	25	24.8
SO_2	Annual	60	3
	24 Hour	228	11
	1 Hour	570	57

Pollutant	Average Period	EPA Criterion	Adopted Background Concentration
NO_2	10 minutes [b]	712	107
	Annual	62	23
	1 Hour	246	100
CO	8 Hour	10,000	3,000
	1 Hour	30,000	5,000
	15 minutes [b]	100,000	8,000

Issues for Consideration

Construction

Construction air quality impacts and amenity issues arising at construction are generally in relation to:

- Annoyance due to dust deposition (soiling or surfaces) and visible dust plumes;
- Elevated PM_{10} concentrations due to dust-generating activities; and
- Exhaust emissions from diesel-powered construction equipment.

Exhaust emissions from on-site plant and equipment and site traffic are unlikely to have a significant impact on local air quality. Very high levels of soiling can damage vegetation and affect the health and diversity of ecosystems.

The risk of dust impacts from a demolition/construction site causing loss of amenity and/or health or ecological impacts is related to the nature and duration of the activities being undertaken, the size of the site, current meteorological conditions, proximity and sensitivity of receptors, and adequacy of the mitigation measures applied to reduce or eliminate dust.

Any effects of construction on airborne particle concentrations would generally be temporary and relatively short-lived. Mitigation measures to minimise the effect of construction related issues will be proposed in the Construction Environmental Management Plan prior to the issuing of CC.

Operation

Source of emissions to air from the operation of the proposed EfW Facility way include:

- Combustion gases and particles from the ventilation stack;
- Odour from unloading of fuel sources, the fuel bunker, effluents, bottom ash pit and the overall TNG Facility; and
- Exhaust emissions from trucks transporting fuel and waste to the EfW Facility.

The primary emissions from the EfW Facility, as defined by emissions limits for waste incinerations set by ED IED include:

- Particulate matter (PM), assumed to be emitted as PM10 and PM2.5a;
- Hydrogen Chloride (HCl);
- Hydrogen Fluoride (HF);
- Carbon Monoxide (CO);
- Sulphur Dioxide (SO2);
- Oxides of nitrogen (NOx) (expressed as Nitrogen Dioxide (NO2));
- Heavy metals (including Mercury (Hg), Cadmium (Cd), Thallium (Tl), Antinomy (Sb)Arsenic (As);
- Chromium (Cr (III) and Cr (VI)), Lead (Pb), Cobalt (Co), Copper (Cu), Manganese (Mn), Nickel (Ni), Vanadium (V);
- Gaseous and vaporous organic substances (expressed as total organic carbon (TOC)); and
- Dioxins and furans.

The proposed EfW Facility presented in this request for SEARs is proposed to incorporated BAT for flue gas treatment designed to meet the most stringent in-stack concentrations limits and ambient air quality criteria applicable for NSW.

Proposed Methodology

Air quality performance data from the reference facility in Ferrybridge, UK would be used to inform a specialist AQIA Report to be prepared as part of the EIS to assess the Project against upper limit EU IED standards and NSW EPA requirements. The AQIA would also form the basis for the specialist human health risk assessment to be included as part of the EIS.

The EIS will include a qualitative assessment of construction and a quantitative assessment of operational air quality impacts which would be conducted in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (EPA, 2017). The Approved Methods list the statutory methods for modelling and assessing emissions of air pollutants from ambient environments. The Approved Methods outline the requirements for developing air dispersion modelling methodology, analysing meteorological data, and the criteria applicable when considering the potential impacts as a result of operations at the Site. The air quality assessment would take into consideration both 'typical' and 'worst case' emissions to air that may arise during the operation of the Project.

Emissions from all activities associated with the Project during operation would be estimated. Point source emissions would be based on the upper emission limits from BAT Reference Document for Waste Incineration published 12 November 2019 (BREFT WI), and information provided from the reference plant in Ferrybridge. Fugitive source emissions would be based on relevant emission factors from the relevant National Pollution Inventory emission estimation handbooks. Odour emissions would be estimated from literature.

The EIS will include an assessment of the cumulative impacts due to the Project, existing sources and/or approved sources of air pollutants in the region. A screening level ozone assessment will be carried out in accordance with methodology set out in *A Tiered Procedure for Estimating Ground-Level Ozone Impacts from Stationary Sources* (Environ Australia Pty Ltd, 2011) prepared for NSW EPA.

Based on the outcome of the air quality impact assessment, mitigation and management measures, design considerations and monitoring strategies would be recommended to reduce potential air quality impacts and facilitate achieving consistent compliance with relevant air quality standards at sensitive receptors.

8.1.3. Human Health

Existing Environment

The existing environment and key sensitive receivers have been detailed throughout Section 1.1.3 of this report. The human health assessment will consider the related human health risks and implications from other assessments including air quality, contamination, noise, dust and hazard and risk.

Issues for Consideration

Construction

Human health risks associated with the construction of the Project are considered minimal. There exists a potential risk of exposure to construction workers and perhaps receivers in proximity to the Site in relation to the disturbance of contaminated soil. This however is considered unlikely given the intention to implement effective and proven methods to prevent exposure and minimise dust emissions from the construction activities.

Operation

In relation to operational human health risk, air emissions from the facilities stack pose the greatest threat. This however is unlikely when compared against existing facilities in the EU which are guided by stringent air quality standards and operate successfully without human health risks as a result of air emissions. Despite this, any exceedance of the NSW emissions limits poses both long-and short-term health impacts to nearby receivers.

Additional operational impacts associated with health risk include noise and hazards which present a risk of human exposure. This however can be managed through adequate mitigation measures.

Proposed Assessment Methodology

A Human Health Risk Assessment (**HHRA** is proposed to be undertaken by a suitably qualified consultant upon the issuing of SEARs from the DPIE. The assessment is to be undertaken in accordance with the following guidelines:

- Environmental Health Risk Assessment: Guidelines for Assessing Human Health Risks from Environmental Hazards. Department of Health and Ageing and enHealth Council, Commonwealth of Australia (enHealth, 2012a);
- Australian Exposure Factor Guide, Department of Health and Ageing and enHealth Council, Commonwealth of Australia (enHealth, 2012b);
- National Environment Protection (Assessment of Site Contamination) Measure (ASC NEPM) 1999, National Environment Protection Council (NEPC), as amended and in force on 16 May 2013 (ASC NEPM, 2013); and
- Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities. Office of Solid Waste, US Environmental Protection Agency (US EPA, 2005).

The HHRA methodology would include conducting a review of existing health statistics for the study area, evaluating the detailed AQIA findings and conducting a quantitative assessment of risk due to emissions to air and due to multi-pathway exposures for persistent chemicals attached to particles. The HHRA will provide a review of best practice mitigation measures on potential emissions and related risks.

8.1.4. Noise & Vibration

Existing Environment

The development site forms part of a larger industrial land holding located within an existing industrial area that is undergoing development growth.

The Site does not immediately adjoin residential zoned land or residential receivers, with the nearest sensitive receivers located in Erskine Park and Minchinbury approximately 1km to the west and north of the development site respectively. In addition to residential receivers, other adjacent land uses identified as being relevant to the assessment include:

- Three schools including Minchinbury Public, James Erskine Primary school and Erskine Park High School; and
- Commercial and Industrial premises to the north and east within Erskine Park.

Road and vehicle access to the Site is via an established classified and industrial road network. Access to the Site does not require trucks or cars associated with the operation to use residential street networks.

As part of the assessment undertaken for SSD 6236 previous noise monitoring was undertaken in 2015, this data is able to be utilised to establish the existing environments background noise levels. The unattended noise monitoring was undertaken at the location of the two most sensitive residential receivers to establish a baseline noise environment. These receivers included:

- BG1: 24 Cobbler Crescent, Minchinbury, to the north of the Site; and
- BG2: 4 Blackbird Glen, Erskine Park, to the west of the Site.

These locations were identified as they represent the existing ambient and background noise environments in the two closest and potentially most affected sensitive receiver areas to the Project, without being unduly affected by road traffic noise from the M4. The ambient noise levels established as a result are provided in Table 9.

Table 9 Summary of Previous Unattended Noise Monitoring Results

Location	Measured RBL dB(A)			Measured Ambient Noise Level $L_{eq.15min}$ dB(A)		
	Day[1]	Evening[2]	Night[3]	Day[1]	Evening[2]	Night[3]
BG1	43	48	41	55	54	51
BG2	37	44	35	53	57	46

1. Day is defined as 7:00am to 6:00pm, Monday to Saturday and 8:00am to 6:00pm Sundays & Public Holidays
2. Evening is defined as 6:00pm to 10:00pm, Monday to Sunday and Public Holidays
3. Night is defined as 10:00pm to 7:00am, Monday to Sunday and 10:00pm to 8:00am Sundays and Public Holidays

Issues for Consideration

Construction

The following key matters have been identified as key issues to be considered in the assessment of the impact of noise and vibration during the construction of the Project:

- The construction of the EfW Facility is expected to last 36 months and be completed over multiple stages;
- Typical construction hours will be 7:00am to 6:00pm Monday to Friday and 8:00am to 1:00pm Saturdays across all phases of the construction works;
- Some construction activities would be required to work outside of standard hours (7:00am to 8:00am and 1:00pm to 6:00pm Saturdays in conjunction with specific periods of 24-hour operation); and
- All noise sources, plant and machinery, anticipated to be used in the Site preparation construction and implementation of the facility and the associated noise levels are to be identified and ensure noise exceedance levels are not triggered.

Operation

The EfW Facility is proposed to operate 24 hours a day, seven days a week. Noise sources during operation would include the facilities boiler, turbine and other equipment as well as truck movements within the Site, and road traffic noise generated when transporting fuel and generated residuals to and from the Site.

The potential noise impacts of the operation of the EfW Facility with consideration to cumulative noise impacts from the existing Eastern Creek Recycling Ecology Park & Landfill would be assessed at the nearest residential receivers at Minchinbury and Erskine Park. The operation of the Project will generate additional traffic which would require an assessment of potential road noise traffic.

Vibration

Due to the proximity of the nearest residential receivers it is not anticipated that during construction temporary vibration impacts will be encountered. Despite this, to ensure any issues arising from construction are mitigated against, selection of suitable piling methods and implementing standard control procedures that could minimise potential vibration impacts will be utilised. Operational activities are unlikely to result in vibration impacts to receivers.

Proposed Assessment Methodology

As part of the preparation of the EIS a detailed Noise and Vibration Impact Assessment would be carried out. The existing background noise data referenced above would be reviewed, however it is the intention of TNG to commission a new impact assessment be undertaken for more up to date figures. The detailed assessment will consider the latest Projects design, plant and equipment, proposed construction methodology and traffic volumes.

Construction

The NSW EPA's Interim Construction Noise Guideline (**ICNG**) is the principal guidance for the assessment and management of construction noise in NSW. The ICNG recommends that a quantitative assessment is carried out for all 'major construction projects' that are typically subject to the EIA process. Construction noise scenarios would be developed based on the typical plant and equipment that would be operating

during the main phases of construction including with consideration to any off-site laydown areas (if noise generating activities are proposed).

Results of construction noise and vibration associated with the Project would be compared against management levels derived in accordance with the ICNG (DECC, 2009). All reasonable and feasible noise mitigation measures would be applied to the construction works. In the event that noise management levels are exceeded with the application of mitigation measures, alternative noise management measures would be identified and implemented where appropriate.

A qualitative assessment of the potential for vibration impacts resulting from the Project together with recommended mitigation measures, if deemed necessary, will be provided in the EIS.

Operational Noise

Operational noise impacts from the Project will be assessed in accordance with the *Noise Policy for Industry* (NSW EPA, 2017) which considers short-term intrusiveness due to changes in the noise environment and maintaining the noise amenity of the area. The operational noise assessment would include modelling to undertake an assessment of the key operational noise sources (plant and equipment) from the Project and the impact on nearby sensitive receivers. Based upon the outcomes of the operational noise assessment, noise attenuation and mitigation measures would be recommended where required.

Traffic Noise

A traffic noise assessment in accordance with the *NSW Road Noise Policy* (DECCW, 2011) would be completed to identify strategies to address potential road traffic noise during construction and operation. A preliminary assessment would be undertaken and would include an assessment of the predicted additional traffic generated by the Project compared to the existing traffic along Wallgrove Road. Further assessment would not be required if the increase in noise due to traffic is below 2 dB(A). If this is not the case, then additional assessments under the *NSW Road Noise Policy* would be completed.

8.1.5. Soils & Water

Existing Environment

The original proposal (SSD 6236) involved early stage construction works including the clearing and removal of vegetation combined with bulk earthworks to establish a level construction pad for the EfW plant; construct a waste storage bunker and on-site stormwater detention.

A large portion of the early works and site establishment will now be undertaken as part of the civil works for the subdivision under DA 19-01184 presently before Blacktown City Council.

The described construction works in Section 3.2 will require disturbance of soils and the interference with the existing hydrology of the Site.

The local hydrology of the Site reflects a highly modified system that has arisen from successive land improvement works the most notable of which being the former quarrying operations that altered and continues to influence the groundwater regime. Modification of the landform associated with former land clearing practices to establish agricultural pursuits resulted in significant degradation of the riparian corridor to the Ropes Creek Tributary, leading to fragmented vegetation patches with limited structural complexity and the altered water regimes that includes the construction of on-site water storage (dam).

Soil health influenced by past land use has been determined as suitable for continued commercial and industrial in the initial works undertaken as part of SSDA 6236. Soil character is identified as friable contributing to the potential to be erosive and dispersive and moderately saline.

Issues for Consideration

The following issues have been identified for consideration during the assessment stages of the EIS in relation to soils and water:

Soil

- Soil Health – contamination
- Construction – bulk earthworks and fill importation
- Construction – dust, erosion and sediment

Surface Water Flows and Quality

- Surface Water: Ropes Creek Tributary
- Impacts on Ropes Creek Tributary
- North-South Drainage Line

Groundwater

- Flow and Recharge
- Dewatering
- Potential for Contamination

Salinity

- The effect of reusing of saline soils on-site (i.e. balance of cut and fill)
- The construction of the detention basin near to the Tributary and the potential to release additional soil through disturbance
- The potential impacts of saline soils on building materials
- Impacts on quality of groundwater

Surface and Stormwater Management

- Proposed on-site detention basin – compliant with SEPP 59 and the requirements of the Eastern Creek Precinct Plan (stage 3)
- Bio-retention providing water sensitive urban design aimed at reducing the congregation of sediments and nutrients

Flooding

Whilst initial studies have indicated the proposed flood levels of Ropes Creek do not adversely affect the Site, nor is the Site identified as being flood prone, consideration will be given in design to the appropriate management of stormwater, the basin and detention surface water runoff.

Water Demands

- Operation – EfW plant water demand
- EfW plant process water requirements:
    - Water/steam cycle
    - Flue gas treatment and boiler cleaning
    - Bottom ash harvesting
- User staff facilities
- Fire Management
- Water Capture and re-use

Proposed Assessment Methodology

The identification and assessment of potential impacts on soil and water is likely to be informed by the following technical studies that are to be prepared in support of the application:

- Soil and Water Impacts;
- Flora and Fauna Report;
- Preliminary and Detailed Sire Investigations; and
- Civil Infrastructure Report.

Methodology to be undertaken for each of the above reports will differ being relevant to their specific discipline, however the following assessment methodologies are likely to be undertaken:

- Extensive literature review to characterise the local conditions including; rainfall and climate; topography and geomorphology; soil types and properties including dispersive and erosive qualities combined with consideration of actual or potential presence of acid sulphate soils; geology and hydrogeology; potential for existing contamination of soil and/or groundwater; salinity; and surface water system including existing catchment conditions for the Site and the local catchment area including existing surface water run-off yields;
- A walkover site inspection was undertaken, and groundwater levels were measured in the existing shallow monitoring bores to provide updated information on shallow groundwater and salinity conditions;

- Investigation into rainfall, climate, topography, soil, geological, hydrological and hydrogeological conditions at the Site;
- Assess any potential for changes to groundwater recharge conditions and identify implications for the local groundwater system; and
- Assessment of potential impacts associated with changes to geomorphology; including changes to erosion and sedimentation patterns and implications due to acid sulphate soils and/or existing contamination.

8.1.6. Traffic & Transport

Existing Environment

Site Access

The Site forms part of the WSEA located approximately 35 kilometres west of the Sydney CBD and 14 kilometres west of the Parramatta CBD. More specifically, the Site is located within the Eastern Creek Precinct and lies to the south of the M4 Motorway, west of the Wallgrove Road/Westlink M7 Motorway.

The Site is well service by established road infrastructure. The principal entry to the Site is via Honeycomb Drive, with the principle vehicles route to the Site likely to be M4/M7 to Wallgrove Road, Wallgrove Road to Wonderland Drive connecting to Honeycomb Drive and the site entry of Dial-a-Dump and the Eastern Creek Recycling Ecology Park & Landfill. All streets connecting to the Site are within an emerging industrial area.

Existing Traffic Generation: Eastern Creek MPC

A previous traffic report had been prepared by Transport and Traffic Planning Associates (TTPA) in connection with the operation of the Eastern Creek Facility for SSD 6236, these traffic volumes are summarised in the table below. The traffic volumes counts were undertaken on 18 March 2014 on the private internal road known as DADI Drive (road entry serving both TNG/Eastern Creek and Hanson).

Table 10 Existing Traffic Generation

Site	AM Traffic Volume	PM Traffic Volume
Eastern Creek Recycling Ecology Park & Landfill	96	96
Hason	156	125
Total	**252**	**211**

Table 11 Surveyed Traffic Movements

Time	In	Out	Peak Total
AM Peak (8.00am – 9.00am)	102	107	**209**
PM Peak (3.00pm-4.00pm)	80	117	**197**

Issues for Consideration

The number of daily trips, heavy vehicle and light vehicle trips will be assessed as part of a Traffic Impact Assessment (**TIA**) to be undertaken as part of the EIS stage and further refined during design confirmation. It is noted the traffic increase from the Project may in combination with traffic generated form the existing Eastern Creek Recycling Ecology Park & Landfill, and the Hanson site when operating at peak capacity potentially impact the capacity of DADI Drive and the closest intersection at Wallgrove Road and Wonderland Drive. This will be confirmed through analysis of the TIA.

Construction

Matters to be considered relating to traffic and transport during construction are to include:

- Temporary increase in traffic volume due to trucks transporting construction machinery, and raw materials to the Site and construction waste for off-site disposal as well as light vehicle generation from construction workers; and
- Movement of heavy vehicle loads and oversized load transport to the Site.

Operation

To determine the potential impact of the EfW Facility once operational on the existing traffic network, the following is to be considered:

- Identification of the maximum capacity of the facility and staff numbers;
- Utilise information of accessibility of the Site by alternative modes of transport to determine staff transport modal split (if any);
- Identification of the typical delivery load size (i.e. tonnage per vehicle);
- Using average truck tonnage and maximum yearly throughput to determine the average daily trips (based on the hours and days of operation for certain operations);
- Using existing road traffic data for DADI Drive and including the proposed traffic volumes to determine the likely daily trip volumes; and
- Model intersection operation using volume data to identify the operational level.

Proposed Assessment Methodology

The TIA to be undertaken at the EIS stage is to undertake the following methodology:

- Establish existing traffic environment through literature review of previous traffic statement and confirm via traffic count survey;
- Estimate potential traffic volumes using information such as typical vehicle size/load capacity, facility design capacity, hours and day of operation; and
- Modell traffic (existing and likely) volumes using SIDRA software to determine potential impact on road network and intersection operation.

The traffic report will provide an assessment of the existing conditions within the Precinct as well as an assessment of the potential traffic impact specifically related to the construction and operation of the Project.

The regional and local road network and the proposed capacity of the Precinct will be considered as part of the application. The Site is presently accessed via Honeycomb Drive which runs in an east bound direction from Wonderland Drive. Positioned within the Eastern Creek Employment Precinct, the Site is well serviced by both the M4 and M7 motorways.

8.1.7. Social & Economic

Existing Environment

The Project is located within the Blacktown LGA. Given the significant investment within the LGA as a result of the co-ordination and release of land for residential, employment and urban development through the likes of the State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (**Growth Centres SEPP**) and the WSEA SEPP, the NSW Government's 2019 NSW Population Projections estimated that the population of Blacktown is projected to grow from 348,050 residents in 2016 to 612,150 by 2041.

Given the Site's location within the WSEA, the key economic activities in the vicinity of the Project include industrial, manufacturing, warehousing, storage and research uses, and ancillary office space. The nearest residential receivers are located approximately 1km to the west and north of the Site, whilst nearby schools including Minchinbury Public, James Erskine Primary and Erskine Park High School which vary in proximity.

Issues for Consideration

The Project will provide the following direct and indirect social and economic benefits to the local LGA and wider region:

- The creation of up to 43 permanent jobs during the operation of the Project;
- The creation of up to 500 employment opportunities during the construction of the Project which is scheduled to take 36 months; and

- Sourcing project inputs from Australia and local providers where possible, including significant manufactured units from local original equipment manufacturers.

The Project will allow TNG to provide a safe, clean and reliable form of energy generation to Metropolitan Sydney, including for up to 36,000 homes in Western Sydney now and into the future, whilst providing a means of waste management resulting in improved management and less reliance on the need for landfill in the Metropolitan Sydney.

Additionally, the Project will contribute to energy security and diversity by providing additional low carbon, renewable electricity generation capacity that is estimated to result in a net positive Greenhouse Gas effect over a 30-year period.

However, the Project has the potential to impact upon the amenity of the surrounding receptors and land use during the construction and operation as a result of air quality, transport, noise and visual impacts. The Project also has the potential to impact upon public amenity during construction. The potential impacts on sensitive receptors including nearby residential receivers and local schools as noted above would be given considerable consideration during the EIS process. The community consultation and engagement strategy referenced in Section 4 to be undertaken by TNG will inform the Social Impact Assessment regarding community perceptions and key concerns, enabling the incorporation of mitigation measures and strategies to be detailed within the EIS.

Proposed Assessment Methodology

In order to address issues pertaining to social and economic concerns within the EIS, a Social Impact Assessment (**SIA**) will be prepared to be consistent with the approach outlined within the *Social Impact Assessment Guideline for State Significant Mining, Petroleum, Production and Extractive Industry Development* (NSW Department of Planning & Environment, 2017) and the *Environmental Planning and Impact Assessment Practice Note: Socio-economic Assessment* (Roads and Maritime Services, 2013). This approach utilises social indicators to assess impacts and monitor changes to the socio-economic environment. This approach is consistent with guidance provided in *Techniques for Effective Social Impact Assessment: A Practical Guide* (Office of Social Policy, NSW Government Social Policy Directorate, 1995).

The SIA and assessment within the EIS would predominantly focus on the potential for amenity impacts to receptors, informed by the technical impact assessment carried out for each relevant environmental issue. In addition, impacts to social infrastructure and community facilities, public and private land, and local industrial/commercial land use would also be assessed. The SIA will be informed by publicly available information, as well as feedback received as a result of community and stakeholder consultation and engagement and the wider economic benefits of the Project.

8.1.8. Greenhouse Gas Emissions

Existing Environment

To establish the potential impacts against the relevant air quality standards and criteria it is necessary to have information in existing concentrations for the area in which the TNG Facility would potentially contribute to these concentrations. The existing air quality has been detailed in Section 8.1.2 and specifically Table 8.

Issues for Consideration

The statutory policy that guides development regarding GHG emissions seeks to minimise gases, such as Carbon Dioxide, Methane, Nitrous Oxide and Fluorinated gases. Reduction in GHG emissions will slow the greenhouse effect which is contributing to global warming. To this end the key issues considered in this assessment have included:

- The potential GHG emissions associated with the operation of the EfW Facility;
- The potential benefits of the operation on reducing the production of GHG emissions, based on 300,000 tonnes/pa of waste being diverted from landfill (thereby reducing methane production);
- The cumulative effect GHG emissions produced and avoided, to determine the net GHG emissions likely to be associated with the operation; and
- The potential long-term benefits of an alternative waste management and energy production alternative in reducing GHG emissions associated with landfill and traditional fuel/energy sources.

Proposed Assessment Methodology

The GHG Protocol will be utilised in the environmental assessment undertaken during the EIS process. The GHG Protocol defines three scopes for developing inventories leading to reporting of emissions. These scopes help to delineate direct and indirect emission sources, improve transparency, and provide a degree of flexibility for individual organisations to report based on their organisational structure, business activities and business goals.

The three scopes of emissions are defined in the GHG Protocol as follows:

Scope 1 emissions: Direct GHG emissions occurring from sources owned or controlled by the company – for example vehicle fleet and direct fuel combustion. Any negative emissions (sequestration), for example from a plantation owned by the entity, would also be included in Scope 1.

Scope 2 emissions: Indirect GHG emissions occurring from purchasing electricity or heat from other parties.

Scope 3 emissions: Indirect emissions which occur due to the company's business activities, but from sources not owned or controlled by the company, such as emissions from employee business-related air travel.

8.1.9. Visual Impact

Existing Environment

The Site is located at Eastern Creek, approximately 36 km west of the Sydney CBD within the WSEA, a developing industrial area located within proximity to low density residential development.

Subregional Setting (1 to 5km)

The sub-regional setting to the east and south is primarily comprised of large form industrial buildings.

The residential suburbs of Minchinbury, Colyton and Erskine Park are located to the north, north-west and west respectively. The suburban residential character is primarily comprised of single storey residences with construction typically of brick veneer with tiled roofs with scattered canopy tree planting throughout.

The infrastructure associated with the setting includes the M4 Motorway and high voltage powerlines which traverse the setting.

Local Setting (<1km)

The eastern part of the local setting is comprised of industrial uses with large form industrial buildings constructed typically of tilt concrete slabs with metal deck roofs. The undeveloped areas are comprised of open paddocks. High voltage power lines diagonally traverse the setting to the east of the Site in a north-west to southeast direction.

The western part of the setting comprises an area of undeveloped open space along Ropes Creek Tributary, comprised of remnant and regrowth riparian vegetation up to 15 m in height.

Issues for Consideration

The critical issues to consider in the assessment of the visual impact include:

- Height of proposed emission stack and buildings and their potential to cause visual amenity impact when viewed from nearby sensitive locations;
- Visual impact of plume rise; and
- Excessive ambient artificial light at night, contributing to light overspill.

Proposed Assessment Methodology

A Visual Impact Assessment using both qualitative and quantitative measures of potential impacts will be undertaken to inform the EIS. The process generally involves the following:

- Establish the urban viewshed of the Site (i.e. land where highest impacts are likely to occur, typically within 2.5 km of the Site area boundary) and identify sensitive viewpoints;
- Characterise and analyse the existing visual context and setting of the Site to determine the potential for impact;

- Undertake qualitative and quantitative assessment by considering and answering questions summarised in Table 12; and
- Categorisation of impacts allowing for decreasing visual modification as the distance from the development to various viewpoint locations increases.

Table 12 Visual Impact Assessment Criteria

Qualitative Assessment Criteria	Quantitative Assessment Criteria
Visual modification/compatibility – How does the proposed development contrast with the landscape character of the surrounding setting?	How much of the proposed development is visible from particular viewpoints?
Quality – What is the quality of the landscape setting?	Visual prominence – what is the quantum of viewshed subject to change?
Sensitivity – How sensitive will viewers be to the proposed development?	

8.1.10. Hazard & Risk

Existing Environment

The existing Eastern Creek Recycling Ecology Park & Landfill operations contains waste products and machinery that has the potential to cause hazard and risk. Emergency and incident management procedures and measures are currently implemented on that site to manage the risk of fire and other emergencies and protect life and property.

Issues for Consideration

State Environmental Planning Policy No 33 – Hazardous and Offensive Development (**SEPP 33**) applies to any Projects which fall under the policy's definition of 'potentially hazardous industry' or 'potentially offensive industry'. The Project will involve the handling, storing or processing of a range of substances which in the absence of locational, technical or operational controls may create an off-site risk or offence to people, property or the environment. Such activities would be defined as potentially hazardous or potentially offensive. For 'potentially hazardous industry' SEPP 33 establishes a comprehensive test by way of a PHA to determine the risk to people, property and the environment at the proposed location and in the presence of controls.

It is noted the residue, including FGT, APC and boiler ash generated from the Project is to be classified as restricted waste under the *Waste Classification Guidelines* (EPA 2014). The estimated annual 51,700 t/pa of residue is required to be treated before disposal to landfill. It will be stored in dedicated enclosed silos located adjacent to the flue gas area before being treated on-site with the addition of concrete blocks and then to transported to an appropriate off-site facility, in line with relevant hazardous waste legislation.

Fire hazards at Eastern Creek Recycling Ecology Park & Landfill could potentially pose a risk to the Project and similarly feedstock storage at the Projects fuel bunker could pose a fire risk to the broader site. The nature of the operations over the broader site means that it could have an inherent fire risk which would be managed through design that meets Australian fire safety standards, best management practices and through the development and implementation of emergency response plans consistent with procedures put in place by TNG and the licensed facility operator.

Proposed Assessment Methodology

The proposed assessment methodology in assessing the hazards and risk associated with the Project will include a two-pronged approach incorporating the following:

- Preliminary Hazard Assessment (**PHA**); and
- Fire Risk Assessment (**FRA**).

Preliminary Hazard Assessment

As the Project, if unregulated by mitigation measures, has the potential to be hazardous, a preliminary hazard analysis will be required to be prepared as part of the EIS. The PHA is to be prepared in accordance with the methodology described in the *HIPAP No. 6 – Guidelines for Hazard Analysis* and the DPE's *Multi-Level Risk Assessment*. The PHA would include an assessment of the risk of fatality and injury from fires, explosions or toxic materials from the acute effects of incidents, societal risk and risk to the biophysical environment from restricted waste generated at the Site.

The PHA will:

- Identify potential hazards involved in the Project and recommend appropriate safeguards to ensure that identified risks can be mitigated appropriately; and
- Demonstrate that the Project would not create an unacceptable level of risk.

The PHA will provide enough information to form a judgement about the level of risk involved in the Project, or alternatively recommend additional measures or assessment as may be necessary. The findings of the PHA would advise design development during the EIS stage. Emergency and incident management measures including for fire management and emergency vehicle access will be outlined in the EIS.

Fire Risk Assessment

The FRA will involve the identification of potential fire hazards in both the facility and over the Site. The fire scenarios that are then identified are used to assess the requirements for fire protection for each scenario location at the Site. The likely type of fire scenarios to occur at the proposed EfW Facility that have the potential to impact over the Site boundary include:

- Diesel bund fire;
- Waste bunker fire;
- PAC silo fire; and
- Transformer bund fire.

It should also be noted the Site is not mapped as bushfire prone land on any applying statutory management act. As such assessment of hazard would take a first principle approach of identifying potential hazards.

8.1.11. Flora & Fauna

Existing Environment

As part of the EIS prepared for SSDA 6236, a site survey has previously been undertaken that has provided extensive detail on the existing environments presence and condition. The initial survey undertaken in 2015 and, whilst dated, still offers important information in the preliminary stages of the application. As part of the EIS stage a new ecologist will be engaged to undertake a Flora and Fauna Impact Assessment as part of this application. However, data from the previously undertaken survey work has suggested the following:

Flora

The survey area of approximately 24.4 hectares (ha) in size identified the following vegetation:

- 22.5 hectares of couch grass previously used as grazing pasture;
- An approximate 2,700m^2 patch of Cumberland Plain Woodland, containing Grey Box (*Eucalyptus Moluccana*) and Forest Red Gum (*Eucalyptus Tereticornis*), as well as scattered indigenous groundcovers;
- River-flat Eucalypt Forest located within the southern portion of the Site; and
- 270m^2 of cumbungi (a tall Australian marsh plant from the Typha genus) located within the former farm dam.

The Cumberland Plain Woodland and River-flat Eucalypt Forest identified are listed ecological communities under both the *Environmental Conservation and Biodiversity Act 1999* and the *Threatened Species Act 1995*.

The threatened ecological communities present on the Site were assessed as degraded remnants in Class 2/3 condition, with an understorey dominated by weeds (Class 2/3 condition indicated remnant or regenerating areas with weed invasion). Despite the presence of the two protected flora communities on the Site, no individual flora species listed under the relevant Acts were surveyed.

Fauna

A total of 47 species were surveyed on-site including mammals, birds, frogs, fish, macroinvertebrates and reptiles, detail is provided below in **Table 13**.

Table 13 Summary of Fauna Survey Outcomes

Species Type	Number Record	Protection Status of Record Species
Mammals	10	No statutory protection.
Reptiles	1	No statutory protection.
Frogs	5	No statutory protection – all species common in the western suburbs of Sydney.
Birds	25	No statutory protection – species observed either common or reasonably common within western Sydney. Species likely to occur but not recorded include Sulphur Crested Cockatoo and Little Corella.
Fish	1	No statutory protection (included a long-finned eel).
Macroinvertebrates	5 orders	No statutory protection.
Microbats	5	2 species are listed as threatened under the NSW TSC Act 1995.

Fauna Habitat

The survey contains suitable habitat for a range of common indigenous species, feral species and some threatened indigenous species. These include:

- **Forest and Woodland**: constrained to the northeast and southeast corner of the Site. Dominant species within these fragmented patches include Eucalyptus and Casuarina.
- **Open Paddocks**: The dominant habitat type accounting for 22.5 ha of the site area. Approximately 90 – 99%of the areas consists of open grassland used for pastures with few scattered exotic trees were surveyed within the grassland areas.
- **Farm Dam, Watercourse and Drainage Line**: a 970m² dam is located on a drainage line in the southern portion of the Site. The Dam supports Cumbungi (*Typha Orientalis*).

Issues for Consideration

The following key issues are to be considered within the EIS assessment:

- Potential for adverse impact on vegetation condition;
- Impacts of vegetation removal, including the loss of critically endangered ecological communities; and
- Impact on fauna arising from habitat removal (considering both recorded and likely fauna).

Proposed Assessment Methodology

A biodiversity assessment chapter will be prepared as part of the EIS. The methodology would include conducting desktop searches of relevant databases, reviewing vegetation mapping and conducting a site inspection to identify and describe flora and fauna habitat, populations and ecological communities present on-site. This inspection would identify vegetation to genus level and assess the habitat potential present but would not include detailed biometric vegetation plots.

An assessment will be undertaken of the direct and indirect impacts of the Project on flora and fauna species, habitat, populations and ecological communities as well as an assessment of the significance of the

impacts on species, ecological communities and groundwater dependent ecosystems listed under the EPBC Act and the *NSW Biodiversity Conservation Act 2016* (BC Act) that are considered likely to occur in the area. Measures to avoid, mitigate or offsets would be considered, if residual impacts occur.

8.2. OTHER ENVIRONMENTAL ISSUES

8.2.1. Airspace Operations

Existing Environment

The airspace around any airport is protected to ensure operational safety. For this reason, Australian Government regulations have long recognised the need to restrict building heights under flight paths to protect the airspace; known as 'prescribed airspace'. The regulations ensure that the airspace aircraft fly in is obstacle free, there is no turbulence in the flight path, radar and other navigational equipment can operate free of interference and airport safety lighting is not obscured.

This is regulated through the creation of obstacle limitation surfaces (**OLS**) and procedures for navigational services: aircraft operations (**PAN-OPS**) surfaces around airports. In 2015 an initial Airspace Operations Assessment was undertaken for the previous SSDA 6236 proposal. It is the intention of TNG to commission a new Airspace Operations Assessment to assess the risk of this Project as a threat to future airspace operations. However, in regard to reviewing the existing environment, the previous report by Aviation & Airspace Design Solutions in 2015 noted the following summary in regard to the Site and its potential effect on the OLS and PAN-OPS of the airports at Mascot, Bankstown and the future Western Sydney Airport.

Table 14 Summary of Potential for TNG to Affect Airspace Operations

Protected Airspace	OLS	PAN-OPS	Compliance
Sydney Kingsford-Smith Airport	15,000m radius – TNG beyond the lateral extent	PAN-OPS: 552m AHD TNG: 162.5m AHD	Yes
Bankstown Airport	15,000m radius – TNG beyond the lateral extent	PAN-OPS: 505m AHD TNG: 162.5m AHD	Yes
Nancy-Bird Walton (Western Sydney) Airport	OLS[1]: 223m AHD TNG Stack Height: 162.5m AHD Plume[2]: +30m = 192.5m	Undefined, but given the link between OLS and PAN-OPS a breach is not anticipated[1].	Yes

[1] Estimated OLS and PAN-OPS
[2] Based on modelled exit velocity of 4.3m/s

Issues for Consideration

The assessment of the Projects impact on airspace operation will be informed by the following legislation and frameworks:

- Airports Act 1996;
- Airports (Protection of Airspace) Regulations 1996;
- Procedures for Air Navigation Services – Aircraft Operations (Doc. 8168 PANS-OPS);
- Manual of Standards Part 173 of the Civil Aviation Regulations; and
- Managing Bird Strike Risk at Australian Airports (2015) published by Australian Transport Safety Bureau (https://www.atsb.gov.au/media/5353201/managing_bird_strike_risk_species_information_sheets.pdf).

As guided by the above legislation and framework, the following issues are to be considered within the assessment of the Project regarding airspace operations:

- Determine the potential to impact on the operation of known protected airspace from Bankstown, Sydney Airport and the future Western Sydney Airport;

- Determining the potential Obstacle Limitation Surface (**OLS**) and Procedures for Air Navigation Services – Aircraft Operations (**PAN-OPS**) for the future Western Sydney Airport;
- Determine the potential for the proposed emissions stack and associated plume to breach the OLS and PAN-OPS of protected airspace, in particular the future Western Sydney Airport;
- The potential for turbulence to be created as a result of plume rise and the need to determine if this will pose an adverse safety impact; and
- Identify suitable management and mitigation measures to avoid/overcome safety implications.

Proposed Assessment Methodology

The assessment undertaken as part of the EIS process is likely to be informed by two reports, these include an Airspace Operations Assessment and a Plume Rise Assessment. The two key technical assessment are to inform the following:

- Identification of legislation framework;
- Identification of airports and protected airspace within proximity to the Site;
- Identification of existing and likely OLS and PAN-OPS for relevant and proximate protected airspace (airports);
- Determine potential for impact on operation of protected airspace; and
- Application of the Wildlife Attraction Risk Assessment Framework for land use planning near airports to determine appropriate management and/or mitigation measures to prevent potential bird strike.

8.2.2. Aboriginal & non-Aboriginal Heritage

8.2.2.1. Aboriginal Heritage

Exiting Environment

The Eastern Creek area forms part of the Darug landscape, in which the development site is located. The Site is located on the undulating floodplain between Ropes Creek (450 metres to the west) and Eastern Creek (2.7 kilometres to the east). The Site is made up of low elevation undulating land, with a slight ridge in the running north-south through the southeast portion of the study area. There are also a number of gentle slopes in the northwest and north portions of the Site, associated with low hills. To the west the terrain flattens out towards the floodplain. Overall, the landform units within the Site range from alluvial flats, to gentle ridges, slopes and gullies.

Given the landscape and proximity to multiple water bodies there is a high-moderate potential for archaeological features to be present over the Site. As such it is the intention of TNG to appoint a consultant to undertake an Aboriginal Cultural Heritage Assessment to inform the EIS,

Issues for Consideration

The subdivision proposed under DA 19-01184 and construction of the proposed EfW Facility involves the excavation and modification of the landscape aesthetic that may:

- Directly impact and disturb potential Aboriginal archaeological remains within the footprint of the facility; and
- Directly and indirectly diminish the intangible Aboriginal cultural values associated with the Site and the Eastern Creek area generally through landscape modification.

To determine the quantum of likely impacts detailed a Cultural Heritage Assessment of the broader site and development site will be commissioned by TNG. This assessment will likely include consultation with Local Aboriginal Groups and Stakeholders as well as test pit excavation within the EfW southern portion of the Site to gain a better understanding of the potential historical use of the Site by Aboriginal group.

Proposed Assessment Methodology

When undertaking assessment of potential Aboriginal cultural heritage, the following criteria and standards for assessing the existing conditions, and modelling the impacts of the proposed Development are to be utilised:

- *Environmental Planning and Assessment Act (1979);*
- *National Parks and Wildlife Act (1974);*
- Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment; and
- Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Department of Environment Climate Change and Water (now DPIE).

The methodology and approach to be utilised within the preparation of the Aboriginal Cultural Heritage Report is to be based on the procedure and practice as relevant and provided for in the frameworks outlined above. In brief the following methodology is to be undertaken:

- Literature review of previous archaeology studies completed for the Site and surrounds;
- Consultation with local Aboriginal stakeholder groups to determine social values, community views and opinions with respect to Aboriginal heritage and artefacts;
- Targeted test excavations based on the recommendations of earlier technical reports and consultation outcomes; and
- Interpretation of results from literature review, consultation and test excavation to determine significance.

8.2.2.2. Non-Aboriginal Heritage

Existing Environment

The Site is not an identified item of environmental heritage, nor located within proximity to an identified item or conservation area identified by a statutory planning or heritage instrument. The Site is vacant and free of improvements.

The broader site was the subject of early land grants and use for cultivation soon after colonisation and was not substantially developed, beyond the use of a portion of the broader site as a Nursery, until quarrying commenced in the 1950s, that expanded several times between 1978 and 1986.

The proposed location of the EfW Facility is predominantly located over an area identified as being partially disturbed to disturbed.

Issues for Consideration

Considering the location of the proposed building footprint and the archaeological potential of these locations, the following matters are to be considered in the assessment of key non-Aboriginal heritage during the EIS stage:

- The potential for archaeological relics to occur on the Site and be disturbed because of excavation and land forming works;
- The potential for excavation and construction works to adversely affect the significance of the Site and any relics; and
- The potential for unexpected finds in other areas of land forming works in areas categorised as disturbed.

Proposed Assessment Methodology

Despite the high level of disturbance and low potential for any archaeological significance to be present at the Site, it is the intention of TNG to undertake a Heritage Impact Statement which will likely utilise the following methodology:

- Literature and aerial photography to review and establish historical use and disturbance as a means of determining disturbances that are likely to have taken place as a means of identifying archaeological potential;
- Assessment of Significance using NSW Heritage Criteria and Brickfords and Sullivan (1984) framework; and
- Cross correlation of the potential for archaeological remains to be present on the Site combined with an assessment of potential significance of likely remains across all phases of development and use to determine the potential for adverse impact on heritage values.

9. CONCLUSION

9.1. SUMMARY OF FINDINGS:

This request for SEARs documents a proposal for a waste management facility that utilises the process of thermally treating residual waste fuels to generate electricity and reduce waste going to landfill at Eastern Creek which forms part of the broader WSEA.

The Project has an estimated CIV of approximately $290 million, thereby the Project is classified as SSD and consent is required from the Minister for Planning and Public Spaces, via the submission of a State Significant Development Application.

The first step in the SSDA process is a request for a Scoping Meeting with the DPIE, this in turn will assist with informing the eventual request for SEARs for the Project. Having undertaken a formal Scoping Meeting on 14 April 2020, this report represents a formal request for SEARs and intends to inform the DPIE of the preliminary information pertaining to the Project.

The report demonstrates that the Project meets the criteria for SSD and identifies the key issues for consideration in the assessment of the Project. The key issues in relation to the proposed TNG EfW Facility are summarised as follows:

- Waste Resource Use, Policy & Management;
- Air Quality;
- Human Health;
- Noise & Vibration;
- Soils & Water;
- Traffic & Transport;
- Social & Economic;
- Greenhouse Gas Emissions;
- Visual Impact;
- Hazard & Risk; and
- Flora & Fauna.

Additional issues for consideration in the design and assessment of the Project as part of the EIS include:

- Airspace Operations; and
- Aboriginal & non-Aboriginal Heritage.

9.2. CONCLUSIONS AND RECOMMENDATIONS

The Project represents a positive development outcome for the Site and surrounding area for the following reasons:

- The proposed EfW Facility will ensure a safe, clean and reliable form of energy generation for Metropolitan Sydney now and in the future for up to 36,000 homes, while providing a means of waste management resulting a reduction for the need for landfill in the Metropolitan Sydney;
- The proposed EfW Facility provides a sustainable solution to part of Sydney's growing waste generation;
- The proposed EfW Facility will result in a net positive greenhouse gas effect, eliminating the emission of approximately 12.2 to 13.6 Mt Co2-e over a 30-year period from landfill; and
- No adverse impacts will be experienced by residential properties as the development is well separated from residential areas.

Accordingly, it is requested that the Secretary for the Department of Planning, Industry and Environment NSW review the above information and issue SEARs to enable an EIS to be prepared for the SSDA.

DISCLAIMER

This report is dated May 2020 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd **(Urbis)** opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of The Next Generation **(Instructing Party)** for the purpose of a Request for SEARs **(Purpose)** and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

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All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and based on information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

APPENDIX A SITE SURVEY

(H) RIGHT OF CARRIAGEWAY 21 WIDE & VARIABLE WIDTH (DP1145808)
(J) RIGHT OF CARRIAGEWAY & EASEMENT FOR SERVICES 21.5 WIDE (DP1145808)
(L) RIGHT OF CARRIAGEWAY & EASEMENT FOR SERVICES 12.19 WIDE (DP262213)
(M) EASEMENT FOR SERVICES 2.5, 5 WIDE & VARIABLE WIDTH (DP1145808)
(N) RIGHT OF CARRIAGEWAY 23 & 30 WIDE (DP1145808)
(P) RIGHT OF CARRIAGEWAY 30 WIDE (DP1145808)
(Q) EASEMENT FOR UNDERGROUND CABLES 2 WIDE (VIDE DP1169392)
(R) RIGHT OF ACCESS 4, 9 WIDE & VARIABLE (VIDE DP1169392)
(R1) PROPOSED RIGHT OF CARRIAGEWAY
(S) EASEMENT FOR OVERHEAD POWERLINES 9 WIDE (VIDE DP1169392)
(T) EASEMENT FOR PADMOUNT SUBSTATION 2.82 WIDE (VIDE DP1169392)
(U) RESTRICTION ON USE OF LAND (DP1169392)
(V) EASEMENT FOR WATER SUPPLY PURPOSES 3 WIDE & VARIABLE (DP1173192)
(W) RIGHT OF ACCESS & DRAINAGE PURPOSES 9 WIDE & VARIABLE (DP1173192)
(X) RESTRICTION ON THE USE OF LAND (DP1174800)
(Y) EASEMENT FOR PADMOUNT SUBSTATION 2.75 WIDE (DP1174800)

SCHEDULE OF SHORT LINE				
No.	DISTANCE	ARC	RADIUS	
1		13.89	20.05	
2		22.34	20.95	
3		40.43	20.95	
4		14.45	20.95	
5		13.3	20.05	
6		76.82	212.25	
7		40.28	187.75	
8		37.48	187.75	
9		52.3	211.85	
10		36.94	188.12	
11		87.6	211.5	
12		68.22	188.5	

WARNING:
THIS IS A DRAFT PLAN OF SUBDIVISION PREPARED FOR DISCUSSION AND CONCEPTUAL DESIGN PURPOSES ONLY. NO SURVEY HAS BEEN UNDERTAKEN. THE BOUNDARY INFORMATION HAS BEEN COMPILED FROM RELEVANT PLANS AND DOCUMENTATION THAT ARE AVAILABLE FROM THE LPI, ANY ADDITIONAL INFORMATION SHOWN HAS BEEN PROVIDED BY DESIGN CONSULTANTS. DIMENSIONS, AREAS & EASEMENT LOCATIONS COULD CHANGE FOLLOWING CONSTRUCTION AND ARE SUBJECT TO FINAL SURVEY. IF AREAS, DIMENSIONS & EASEMENTS LOCATIONS ARE TO BE ACCURATELY CALCULATED LANDPARTNERS LIMTIED RECOMMENDS THAT A FULL PLAN OF REDEFINITION/CONSOLIDATION BE UNDERTAKEN TO COMFIRM THE FINAL SURVEY PLAN.

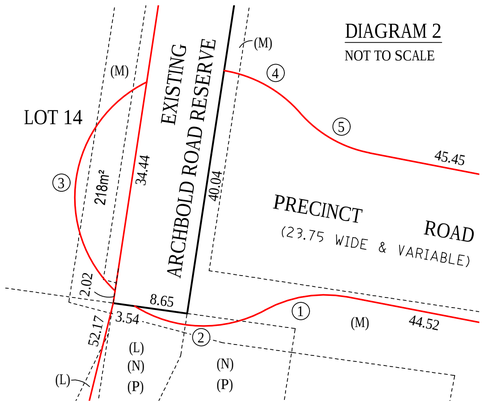
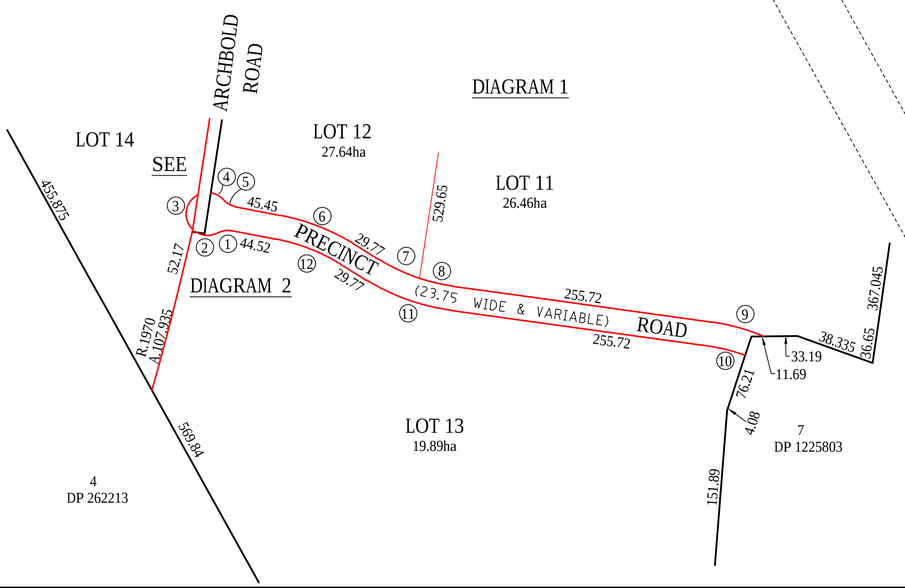
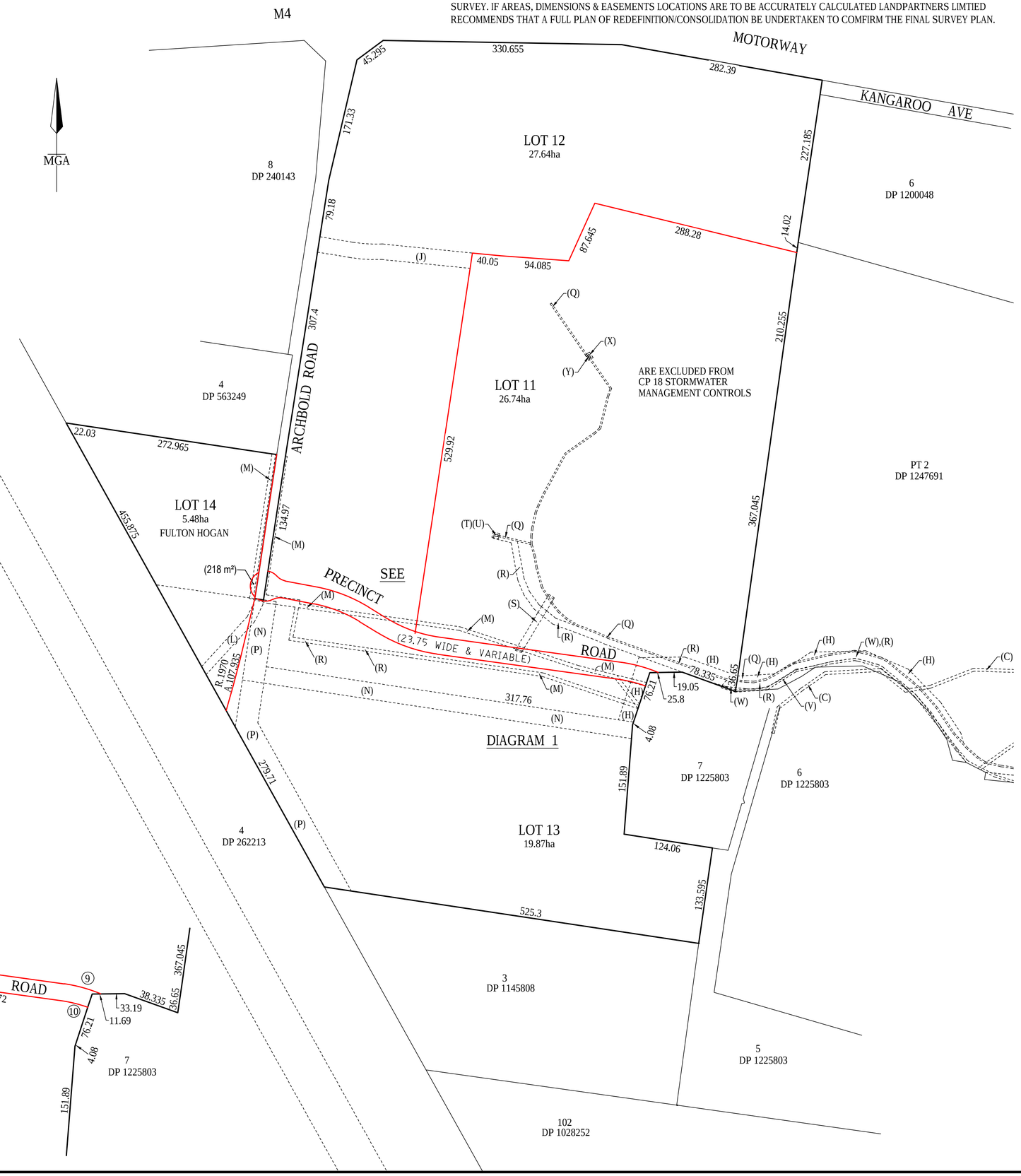


DIAGRAM 2
NOT TO SCALE





THE TITLE BOUNDARIES SHOWN HEREON WERE NOT MARKED AT THE TIME OF SURVEY AND HAVE BEEN DETERMINED BY PLAN DIMENSIONS ONLY AND NOT BY FIELD SURVEY.
DIMENSIONS SHOWN HEREON ARE APPROXIMATE AND SUBJECT TO FINAL SURVEY.

REVISION	LPL	DATE	DESCRIPTION
W	GKO	04/10/19	LOT 3 LINE WORK AMEDNED
V	GKO	24/06/19	PRECINCT ROAD AMENDED
U	GKO	10/01/19	SHEET 2 DETAILS ADDED
T	GKO	09/01/19	LOT 2, 3, 4 AMENDED
S	GKO	17/09/18	LOT 1, 3, 4 CONSOLIDATED
R	GKO	21/08/18	LOT 2/3 AMENDED
Q	GKO	15/08/18	UPDATE LOT LAYOUT
P	GKO	15/03/18	UPDATE LOT LAYOUT
N	GKO	15/05/17	LOT LAYOUT AMENDED
M	GKO	21/04/17	LOT LAYOUT AMENDED

CLIENT
DIAL A DUMP INDUSTRIES

TITLE
PLAN OF PROPOSED SUBDIVISION OF LOTS 1, 2 & 3 IN DP 1145808
ARCHBOLD RD, EASTERN CREEK
LGA: BLACKOWN

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HEIGHT ORIGIN	SURVEYED	DATE
N/A	N/A	N/A
CONTOUR INTERVAL	DRAWN	DATE
N/A	SF	10/01/19
SCALE	CHECKED	DATE
1:3000 @ A1	GKO	10/01/19

DWG NUMBER
SY072757.012
SHEET 1 OF 2

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APPENDIX B MASTERPLAN

THE NEXT GENERATION - ENERGY FROM WASTE FACILITY

EASTERN CREEK NSW 2766

SITE MASTERPLAN

DO NOT SCALE DRAWINGS.
VERIFY ALL DIMENSIONS ON SITE.
REFER ANY DISCREPANCIES TO THE SUPERINTENDENT BEFORE PROCEEDING WITH THE WORK.

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w www.krikistayler.com.au
krikis tayler architects

DATE 13/12/2019
SCALE 1:3000 @ A3
0 15 30 45 75 112.5m

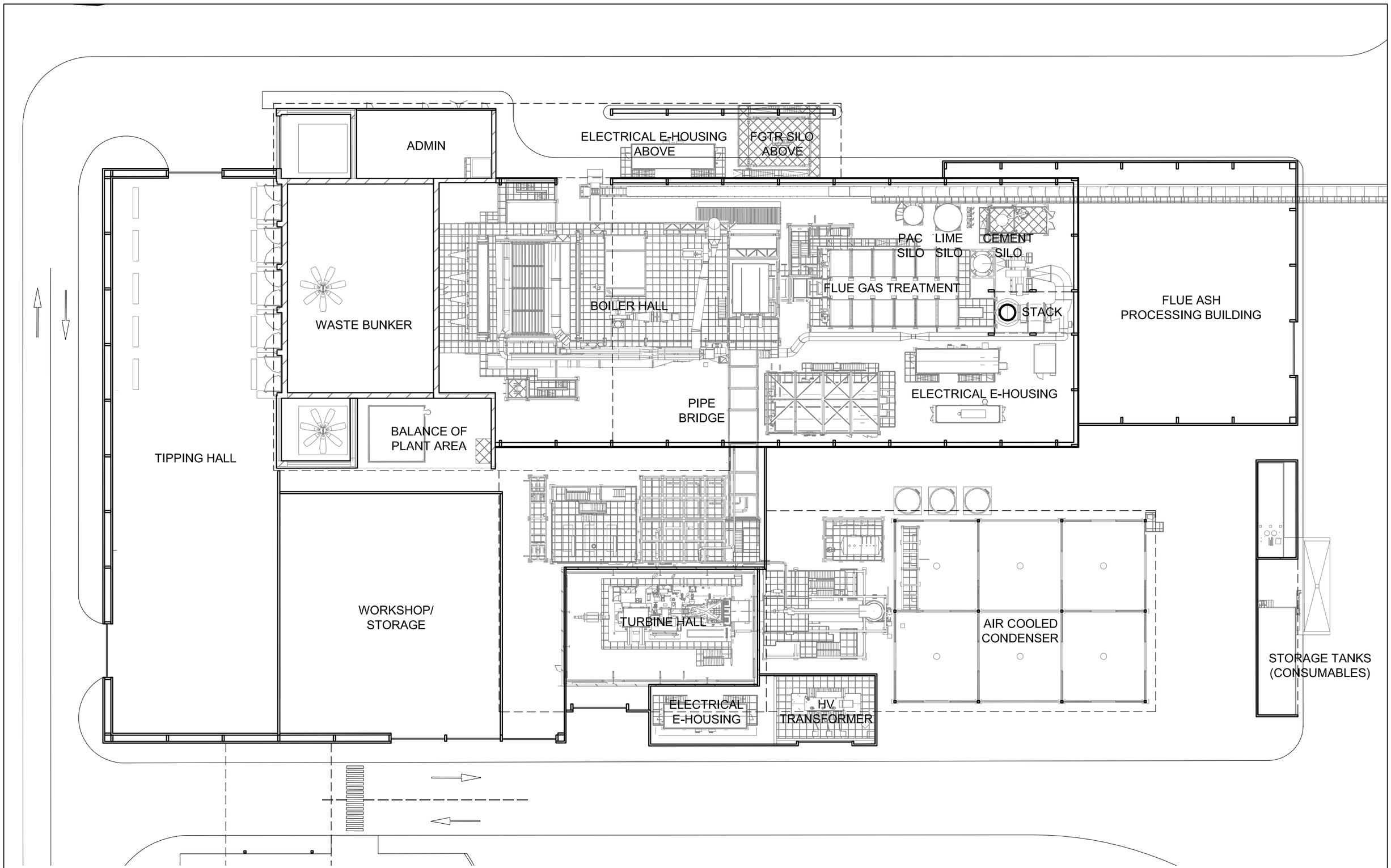
PROJECT NO.	DRAWING NO.	ISSUE
0919	A101	A

A3

50mm 100mm 150mm ON ORIGINAL

URBIS

APPENDIX C GROUND FLOOR PLAN



THE NEXT GENERATION - ENERGY FROM WASTE FACILITY

EASTERN CREEK NSW 2766

DETAIL GROUND FLOOR PLAN

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DATE 13/12/2019
SCALE 1:500 @ A3
0 2.5 5 7.5 12.5 20m

PROJECT NO. 0919
DRAWING NO. A104
ISSUE A

A3

50mm 100mm 150mm ON ORIGINAL