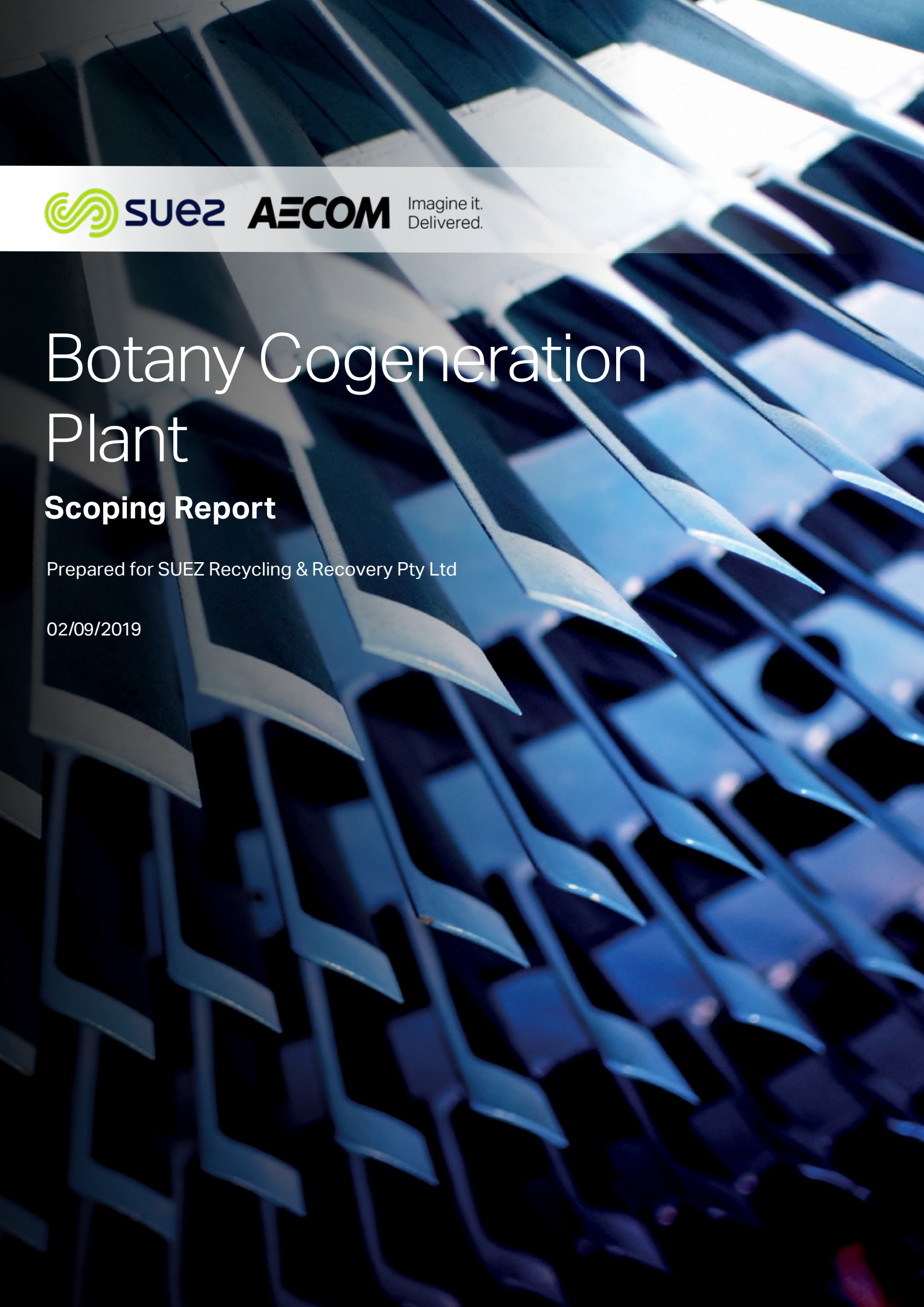


Botany Cogeneration Plant

Scoping Report

Prepared for SUEZ Recycling & Recovery Pty Ltd

02/09/2019

Botany Cogeneration Plant

Client: SUEZ Recycling & Recovery Pty Ltd

ABN: 70 002 902 650

Prepared by

AECOM Australia Pty Ltd
Level 21, 420 George Street, Sydney NSW 2000, PO Box Q410, QVB Post Office NSW 1230, Australia
T +61 2 8934 0000 F +61 2 8934 0001 www.aecom.com
ABN 20 093 846 925

02-Sept-2019

Job No.: 60606969

AECOM in Australia and New Zealand is certified to ISO9001, ISO14001 AS/NZS4801 and OHSAS18001.

Quality Information

Document Botany Cogeneration Plant

Ref 60606969

Date 02-Sept-2019

Prepared by Project Team

Reviewed by Dinuka McKenzie

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
1.0	30-08-2019	Final	Catherine Brady Technical Director	

This page has been left blank intentionally.

Table of Contents

List of Figures

List of Tables

Abbreviations

Abbreviation	Description
µg/L	Microgram per litre
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
AQIA	Air Quality Impact Assessment
BoM	Bureau of Meteorology
BAT	Best Available Techniques (refer BREF)
BCP	Botany Cogeneration Plant (the Project)
BREF	**B**est Available Techniques **Ref**erence documents (developed under the European Integrated Pollution Prevention and Control Bureau Directive and the Industrial Emissions Directive)
BREF WI	BREF for Waste Incineration Facilities
C&D	Construction and Demolition
C&I	Commercial and Industrial
CASA	Civil Aviation Safety Authority
CO	Carbon Monoxide
DG	Dangerous Goods
DP	Deposited Plan
DPE	NSW Department of Planning and Environment (refer DPIE)
DPIE	NSW Department of Planning, Industry and Environment (formerly the DPE)
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EPA	Environmental Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPI	Environmental Planning Instrument
EPL	Environment Protection Licence under the *Protection of the Environment Operations Act 1997* (NSW)
ERP	Energy Recovery Plant
ESP	Engineering Service Provider
EU	European Union
FGTR	Flue Gas Treatment Residuals
FTE	Full time equivalent
GHG	Greenhouse gas
HCl	Hydrogen chloride
HF	Hydrogen fluoride
ICNG	Interim Construction Noise Guideline
IED	EU Industrial Emission Directive

Abbreviation	Description
LEP	Local Environmental Plan
LGA	Local Government Area
mg/L	Milligram per litre
MNES	Matters of National Environmental Significance
MSW	Municipal solid waste
MWth	megawatts thermal
NEPM	National Environment Protection Measures
NOx	Nitrogen oxides
NSW	New South Wales
NSW EPA	NSW Environment Protection Authority
OEH	NSW Office of Environment and Heritage
PEF	Processed Engineered Fuel
PFAS	Per- and poly-fluoroalkyl substances
PHA	Preliminary hazard analysis
POEO Act	*Protection of the Environment Operations Act 1997* (NSW)
QC	Quality control
RMS	Roads and Maritime Service
SBE	Steinmuller Babcock Environment (specialist ERP technology provider)
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SO_2	Sulphur Dioxide
SRD	State and Regional Development
SSD	State Significant Development
SUEZ	SUEZ Recycling and Recovery Pty Ltd
The site	The land area proposed for the Project
TOC	Total organic compounds
Tpa	Tonne per annum
TPM	Total Particulate Matter
TSP	Total suspended particles
WARR	Waste Avoidance and Resource Recovery

Glossary

Term	Definition
Applicant (the)	SUEZ Recycling and Recovery Pty Ltd (SUEZ). SUEZ would be responsible for the design, construction, operation and maintenance of the Botany Cogeneration Plant (BCP).
Bottom ash	A form of ash produced by the fuel combustion process. This material consists of the incompletely combusted or otherwise thermally treated fraction of the fuel, including the non-combustible components such as dirt, rocks, contaminants etc depending on the original waste feedstock composition. This ash can be further processed to remove contaminants and recycled for use in road construction (as commonly occurs in Europe).
BREF	Refers to **B**est available techniques (BAT) **Ref**erence documents which have been adopted under both the European IPPC Directive (2008/1EC) and the Industrial Emissions Directive (IED 2010/75/EU) to guide the development of industrial facilities covered by the IED in the EU. The BREFs inform the relevant decision makers about what may be technically and economically available to industry in order to improve environmental performance. A BREF is not meant to be a textbook on pollution prevention and control techniques. Its content is limited to enabling the determination of BAT and emerging techniques under the IED. In the EU, the key elements of BREFs (i.e. 'BAT conclusions') are typically referenced in setting permit conditions for installations covered by the IED.
BREF WI	The BREF for Waste Incineration facilities which cover energy recovery plants developed in the EU. The BREF WI was adopted by the European IPPC Bureau IED in 2006. A revised Draft BREF WI (2018) has also been published by the European IPPC Bureau.
building #B8	Decommissioned paper mill facility in the south eastern corner of the Site.
building #B9	Operational paper mill facility on the western end of the Site (including associated waste and product storage facilities).
Calorific value	The heating value of a substance, usually fuel or food, being the amount of heat released during the combustion of a specific amount of the substance. Commonly expressed as MJ/kg (Megajoules per kilogram).
Candella project (the)	The Candella industrial subdivision development, approved by the Randwick City Council is located on Lots 1897-1901 adjacent to the eastern boundary of the Site and Project site. The Candella concept plans show two to four story buildings incorporating industrial and commercial land use.
Commercial and industrial (C&I) waste	Solid waste generated by businesses, industries (including shopping centres, restaurants and offices) and institutions (such as schools, hospitals and government offices), such as plastics, metal and timber but not C&D waste or MSW.
Construction and demolition (C&D) waste	Solid waste sourced from construction and demolition works, including building and demolition waste, asphalt waste and excavated natural material.

Term	Definition
Construction	Construction activities for the Project which are expected to include: • Site preparation activities including establishment of construction and traffic management measures, construction compound to allow for temporary site facilities and amenities, laydown areas and storage for plant and materials • Building construction and process equipment installation • Cold and hot commissioning • Construction compound and workforce demobilisation.
Demolition	Demolition of the #B8 facility and any associated Project site preparation works (e.g. contamination assessment and/ or remediation of historic soil contamination) which would be undertaken by Orora under a separate approval process prior to Project site handover. These works do not form part of the Project. Where required, site remediation would be carried out by Orora to a level suitable to support development of the Project (i.e. to support industrial land use development) prior to Project site handover.
Energy Recovery Plant (ERP)	An energy recovery plant is a facility that thermally treats waste or waste derived fuels to generate energy in the form of heat (or steam), electricity, or both.
European IPPC Bureau	European Integrated Pollution Prevention and Control Bureau responsible for the exchange of information between EU Member States and industries on BAT to assist the efficient implementation of the IED across the European Union through the preparation of BREFs. In 2006, the European IPPC Bureau completed the first series of 33 BREFs and launched the review of the first documents that were finalised. Each BREF is the outcome of a two to three year process involving up to 100 experts.
FGTR	Residues from the flue gas treatment system including: • Particulate residues composed of materials drawn upwards, conveyed with the flue gas and removed from the boiler, the fabric filter before the flue gases reach the stack of the plant • The residue from the flue gas treatment system, being the residue that is typically made of the materials added during the flue gas treatment process, such as lime and activated carbon plus the molecules captured by those materials.
Flue Gas Treatment Technologies	Flue gas treatment technology is a system designed to reduce the amount of pollutants or emitted material generated at the stack when fuel is combusted for heat or electricity generation at an ERP.
IED	The Industrial Emissions Directive (IED 2010/75/EU) of the European Parliament adopted on 24 November 2010 is the main EU instrument regulating pollutant emissions from industrial installations. The IED aims to achieve a high level of protection of human health and the environment taken as a whole by reducing harmful industrial emissions across the EU, in particular through better application of BAT.
Mill residuals	Coarse residual fibres leftover from the paper recycling process at the Orora Recycled Paper Mill (such as adhesive tape remnants on cardboard mixed with paper pulp) that is currently diverted to landfill but excluding other mill rejects.

Term	Definition
Municipal solid waste (MSW)	Solid waste (putrescible and non-putrescible) from households and local government operations, including waste placed at the kerbside for local council collection and waste collected by councils from municipal parks and gardens, street sweepings and public council bins.
Non-putrescible	Non-putrescible waste means solid waste which typically does not: • readily decay under standard conditions • emit offensive odours • attract vermin or other vectors (such as flies, birds and rodents). Examples include: glass, plastic, rubber, plasterboard, ceramics, bricks, concrete or metal.
Other mill rejects	Fine rejects comprising fine paper pulp from the recycling process at the Orora Recycled Paper Mill which are currently re-used for land application (compost) and 'ragger tails' from the pulper machine which comprise mixed wire and plastic rejects from cardboard bails which are sent to landfill.
Operation	Comprising the operational and maintenance phase of the BCP. The Project would be operated 24 hours a day, 7 days a week to generate energy in the form of heat (steam) and electricity to power the Orora Recycled Paper Mill.
Orora	Orora Packaging Australia Pty Ltd
Orora Recycled Paper Mill or the 'Mill'	Orora Recycled Paper Mill located at 1891 Botany Road, Matraville. The Mill manufactures 100% recycled brown paper from waste corrugated cardboard. Orora is one of Australia's largest cardboard recyclers.
Processed Engineered Fuel (PEF)	PEF comprises dry waste materials such as non-recoverable timbers, textiles and non-recyclable plastics, processed to remove metals and any hazardous material such as electronic waste, batteries, hazardous chemicals as well as available recyclables, and shredded to a particle size of sub 150 mm. The material contains no putrescible waste.
PEF Production Plant	A new PEF production plant proposed to be built at Chullora (separate to this Project and subject to a separate approvals processes) to produce fuel of a consistent quality that meets the fuel technical specification of the BCP.
Resource recovery	In NSW this currently refers to the re-use and recycling of waste material. Recovery may also include extracting embodied energy from waste through thermal processes.
Project (the)	Construction and operation of the BCP which comprises an ERP that would produce steam and electricity to offset current natural gas generated steam and grid electricity requirements at the Orora Recycled Paper Mill.
Project site (the)	The footprint required for the construction and operation of the Project within the south-eastern corner of the Site, including the footprint of building #B8 as shown in **Figure 4**.
Putrescible	Putrescible waste means solid waste which contains organic matter capable of being decomposed by microorganisms and of such a character and proportion as to be capable of attracting or providing food for vectors including birds and mammals.

Term	Definition
Site (the)	The Orora Recycled Paper Mill premises is located on Lot 14 DP 1205936, Lot 1 DP182378, Lot 28 DP236738, Lot 33 DP236738 and Lot 1 DP 363611 at 1891 Botany Road, Matraville, within the Randwick City Council LGA. The site is owned and operated by Orora.
SUEZ	SUEZ Recycling and Recovery Pty Ltd

Executive Summary

Overview

SUEZ Recycling and Recovery Pty Ltd (SUEZ) is seeking development consent to construct and operate a 'fit-for-purpose' Cogeneration Plant to produce steam and electricity to offset existing natural gas generated steam and grid electricity requirements at the Orora Recycled Paper Mill at Matraville (hereafter referred to as the 'Botany Cogeneration Plant' or the Project). The Project is located within the Orora Recycled Paper Mill premises (the Mill), owned and operated by Orora Packaging Australia Pty Ltd (Orora) at 1891 Botany Road, Matraville.

The proposed Botany Cogeneration Plant (BCP) has a capital investment value in the order of $220 million.

SUEZ would be responsible for the design, construction, operation and maintenance of the BCP.

State Significant Development

The project meets the requirements of State Significant Development (SSD), under clause 4.36 of Part 4 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 Scoping Report has been prepared to support a request for Secretary's Environmental Assessment Requirements (SEARs) for the Project. The SEARs would guide the preparation of an Environmental Impact Statement (EIS) to support the SSD application for the Project under Division 4.7 of Part 4 of the EP&A Act.

Project Need and Justification

The Orora Recycled Paper Mill is facing increasing natural gas and mill process residuals disposal costs in an environment where the recycled cardboard market is becoming more competitive. Large fluctuations in natural gas pricing and difficulties in sourcing reliable gas supply, have led Orora to evaluate alternatives to this fuel source.

An onsite Cogeneration Plant would provide an opportunity to secure the long-term energy needs for the paper mill in a more sustainable way whilst diverting from landfill greater than 90% of the process residuals currently generated at the mill. Having surety of energy supply and reduced process residuals disposal costs would support Orora's business and facilitate its contribution to Australia's economy whilst significantly improving sustainability outcomes.

The Project

The Project seeks to construct and operate a Cogeneration Plant firing approximately 165,000 tonnes per annum (tpa) of fuel, to supply reliable and secure energy for the Orora Recycled Paper Mill.

The Project objectives are to:

- Provide a custom-fit energy solution for the Orora Recycled Paper Mill in order to offset the cost of importing energy, minimise supply reliability risks and enhance energy security for the operation of the Orora Recycled Paper Mill now and into the future
- Assist Orora in moving towards decarbonising its operations by utilising a more sustainable fuel source based on the re-use of existing materials and reducing its reliance on fossil fuels (natural gas), in line with its objective of sustainable practices and reducing its carbon footprint
- Establish a pioneering plant in Australia which fully complies with applicable regulations and standards
- Improve market competitiveness by achieving reduced costs whilst maximising sustainability at the Orora Recycled Paper Mill, supporting ongoing domestic recycling activities

- Promote a circular economy and reduce process residuals disposal costs by using mill residuals and Processed Engineered Fuel (PEF) as fuel and thereby diverting these waste streams from landfill consistent with the waste hierarchy
- Manage potential environmental impacts associated with the construction and operation of the Project in an environmentally and socially responsible manner.

Fuel

No unprocessed waste would be brought onto site. Only fuel pre-certified as meeting the fuel specifications for the Cogeneration Plant would be delivered and used at the BCP.

The fuel would comprise mill residuals from the Orora Recycled Paper Mill and PEF sourced from SUEZ's existing waste network and produced at a separate SUEZ operated facility in Chullora (subject to separate approvals).

Fuel would be subject to resource recovery, pre-processing and quality control at the PEF Plant and Mill in order meet the fuel specifications for the BCP prior to delivery.

Table 1 provides an indicative overview of the fuel proposed to be used at the BCP:

Table 1 Fuel types

	PEF	Mill residuals
		
Tonnes per year	130,000	35,000
% of fuel	80%	20%
Source of material	SUEZ PEF Production Plant at Chullora (subject to separate regulatory approvals)	Orora Recycled Paper Mill
Material Characterisation	Dry, non-putrescible waste materials such as non-recoverable timbers, textiles and non-recyclable plastics, sourced from commercial and industrial suppliers (e.g. retail, manufacturing) and kerbside council collection of bulky waste	Residual plastic fibres from the cardboard recycling process (e.g. tape, stickers etc)
Fuel Transport	PEF delivery from Chullora plant via trucks (approximately 21 per day). The option of rail transport would also be considered in the EIS	Transport of mill residuals via a dedicated enclosed conveyer or internal truck movements (to be confirmed as part of the EIS)

Process overview

The Project would involve the thermal treatment of mill residuals and PEF to generate steam which would be fed directly to the Orora Recycled Paper Mill to supply its operations. Steam condensate would be returned from the Mill to the BCP creating a closed loop of water supply. A portion of the steam generated by the BCP would be directed to a steam-fired turbine to generate electricity.

Residuals generated at the BCP (bottom ash and Flue Gas Treatment Residues (FGTR)) would be disposed offsite at SUEZ operated licensed waste facilities.

SUEZ would maintain a high level of quality control over fuel quality as the operator of the extensive waste network from which materials would be sourced, the operator of the PEF Plant, and the operator of the BCP, including overseeing upstream resource recovery and pre-processing prior to the fuel being delivered to the BCP. Furthermore, as a waste facility operator, SUEZ would be ideally placed to provide for the processing/ disposal of residuals produced at the BCP (bottom ash and FGTR).

The Project would be operated 24 hours a day, 7 days a week.

The Orora Recycled Paper Mill would be the sole energy off-taker for all steam and electricity produced through the Project, net of energy requirements to operate the BCP. In times of low energy requirements Orora would export any surplus electricity to the grid.

An overview of the BCP process is shown in **Figure 1**.

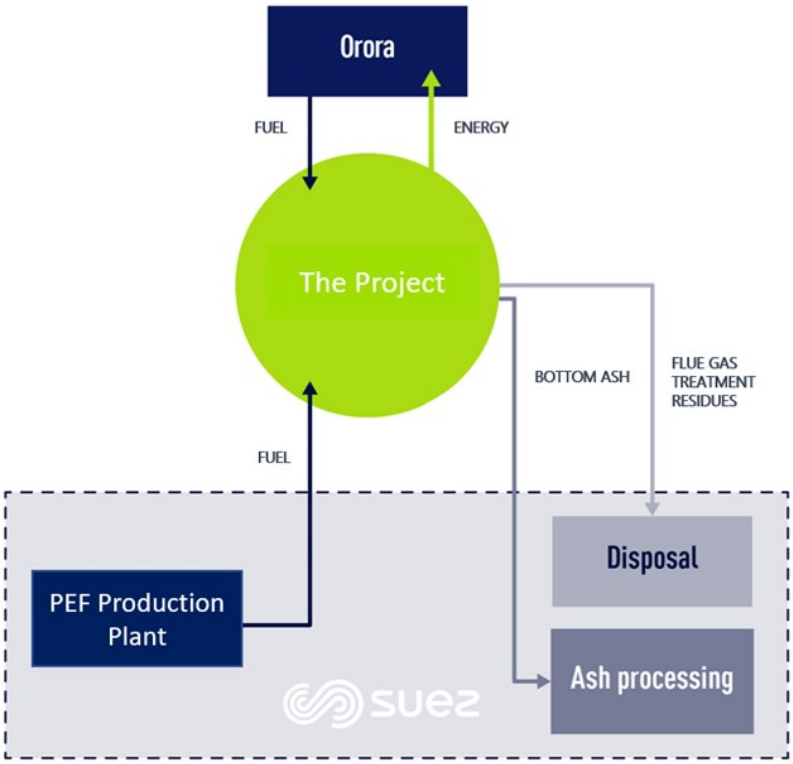


Figure 1 Project Operations Process and SUEZ and Orora Site Responsibilities

Residual Streams

SUEZ is currently investigating downstream processing and reuse opportunities for bottom ash material (such as in road construction as routinely occurs in Europe). In the absence of such applications, the material would be disposed direct to a licenced landfill within the SUEZ network. Offsite transport of bottom ash would involve approximately three truck loads per day.

FGTR which is likely to be classified as restricted waste would be transported to SUEZ licensed landfill facilities using approximately one pneumatic tanker per week.

Operational Monitoring

The BCP would be fully automated incorporating the latest online emissions monitoring technology, continuous monitoring of operational performance and automatic shut off mechanisms where pre-programmed limits are triggered for key parameters, consistent with the operating protocols used at SUEZ' existing energy recovery plants overseas.

Architectural Design

SUEZ has extensive international experience in designing energy recovery plants which take into account surrounding landscape and land use setting to minimise intrusive effects on surrounding receptors consistent with community expectations. The Project would be subject to contemporary architectural design with reference to the site's location context. Examples of SUEZ facilities in the United Kingdom (UK) and France are provided below which demonstrate different designs in response to specific site contexts.

SUEZ Suffolk (UK)

SUEZ OREADE (France)

Figure 2 SUEZ architectural design of facilities in the UK and France

Reference Facilities and International Best Practice

SUEZ has committed to designing the BCP consistent with international practice comprising the BREF for Waste Incineration (WI) facilities adopted under the European Industrial Emissions Directive (IED). SUEZ' existing European fleet of energy recovery plants are being operated to meet current EU IED requirements and the Project would be similarly designed and operated to achieve the requirements of the latest draft of the BREF WI including upper limit emission standards which are more conservative than current applicable NSW Environmental Protection Authority (EPA) (Group 6) emission criteria.

SUEZ has nominated two reference facilities that would provide necessary data and information to inform the approvals process:

- Steag IKW Rudersdorf, Berlin, Germany. This facility utilises like for like technology and fuel and is of a similar size and scale to the Project. Technical data is available to inform environmental impact assessments (e.g. air quality/ noise modelling) and demonstrate the suitability and performance of the technology
- SUEZ Suffolk Energy from Waste Plant, United Kingdom. This facility is located at a similar distance from residential premises to the Project and is referenced to demonstrate SUEZ's community engagement, operational performance and management capabilities at energy recovery plants.

Project Site

The Project would be located on existing disturbed, brownfield land which is zoned for industrial use, at the site of the existing decommissioned paper mill facility #B8 within the Orora Recycled Paper Mill site. Demolition of the #B8 facility and any associated site preparation works would be undertaken by Orora prior to site handover under a separate approval process and these works do not form part of the Project.

Land use surrounding the site comprises industrial zones to the south and northwest including Port Botany operations, approximately 500 m to the west and Sydney Airport approximately 3 km to the north west. Nearest residential receivers are located approximately 130 m to the east along Moorina Avenue, Matraville.

The Applicant

SUEZ has been operating for more than 160 years and is a global leader in water solutions, resource recovery and waste management. Today, SUEZ serves more than 65 million people as a trusted partner of organisations and Governments across five continents, including Australia. SUEZ brings global expertise in developing energy recovery facilities, and has an exceptional track record of building, operating and maintaining energy projects across the world, with safety and environmental compliance always being SUEZ's number one priority. SUEZ currently operates 54 energy recovery plants globally, where more than nine million tonnes of fuel is safely treated, to create energy consumed by millions of people.

Project Benefits

The Project provides the opportunity for beneficial reuse of residual material (which cannot be further recycled or recovered) thereby diverting these waste streams from landfill consistent with the *Waste Avoidance and Resource Recovery Strategy 2014-2021* (WARR Strategy). The Project would 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.

The Project would result in a number of benefits during construction and operation:

- Provide direct and indirect economic and social benefits to the local region and NSW through:
    - The employment of a construction workforce of up to 400 full time equivalent (FTE) positions during the 24 month construction period
    - The creation of up to 30 FTE positions during the operation of the Project
    - Capital investment in the order of $220 million, creating the potential for sourcing project inputs from Australian providers, suppliers and subcontractors, including manufactured units from local and national equipment manufacturers
    - Enabling the use of residual waste in line with the *NSW WARR Strategy 2014-2021*.
    - Offsetting over 1.5 million Giga Joules of natural gas per year (enough to supply approximately 70,000 homes), which would remain on the gas network improving local energy security
    - Offsetting around 63,000 MWh per year of grid electricity (enough to power approximately 12,000 homes), which would remain on the electricity network improving local energy security
- Reducing potential impacts to the natural environment by utilising an existing brownfield industrial site for development and co-location close to the end user of the generated energy
- Introducing a proven technology in energy recovery and PEF production into Australia and provide a working model of a 'circular economy' where residual material (following recovery) becomes a resource
- Reducing usage and dependence on grid electricity and natural gas for the operation of the Orora Recycled Paper Mill
- Cost savings through reduced energy costs and savings from Mill process residuals disposal to support recycling activities
- Allowing excess electricity generated to be fed into the grid to generate revenue in periods of low production demand.

Stakeholder Engagement Approach

SUEZ has engaged Elton Consulting to undertake engagement activities to inform the preparation of this Scoping Report and to provide a framework for ongoing engagement activities throughout Project development and EIS preparation. The community and stakeholder engagement activities carried out to date include:

- Government agency meetings with the NSW Department of Planning, Industry and Environment (DPIE), NSW Environment Protection Authority (EPA), Randwick City Council, Bayside Council, (Federal) Department of infrastructure, Regional Development and Cities, Airservices Australia and Civil Aviation Safety Authority (CASA)
- Research involving focus groups and survey research targeting approximately 222 residents within close proximity to the Project site and in the wider local area
- Review of comparable projects to identify key issues that underpinned regulatory assessment and community concerns to inform EIS preparation and the consultation strategy for the Project
- Lessons learnt from SUEZ's fleet of overseas plants, particularly key community concerns and regulatory challenges and how these have been managed and addressed
- Review of community engagement activities and complaints records at the Orora Recycled Paper Mill to determine issues of importance to receivers surrounding the Project.

The feedback obtained from the engagement activities up to the time of preparation of this Scoping Report has been considered in the preliminary environmental risk analysis carried out and informed the assessment scopes detailed in this Scoping Report. The consultation activities would continue to be implemented throughout project development.

Key Environmental Issues

An environmental risk screening exercise has been undertaken for the Project and is included in this Scoping Report. 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 the significance screening matrix to establish the likely significance of the issue for the environmental assessment of the Project. This screening assessment considered potential impacts on the natural and built environment and the potential interest of the local community and stakeholders. The key environmental assessment issues identified for more detailed assessment during the preparation of the EIS include:

- Air quality in relation to emissions from the operation of the Project 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
- 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 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 and potential impacts to sensitive receivers

- 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
- Cumulative impacts during construction and operation.

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

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

As part of the preparation of the EIS, further assessments would 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 environment during construction and operation of the Project.

Conclusion

SUEZ is seeking approval for the Project under Division 4.7 of Part 4 of the EP&A Act. This Scoping Report provides a preliminary assessment of the environmental and planning considerations to guide the preparation of SEARs for the SSD application.

In assessing the Project, the key focus would be avoidance and minimisation of impacts on the environment and local communities, where practical and feasible, when taking into consideration engineering constraints and cost implications. The assessment would also identify mitigation and management measures to minimise impacts on the environment during construction and operation of the Project. Consultation with stakeholders and the local community would continue throughout the Project assessment, design and construction phases.

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

1.0 Introduction

SUEZ Recycling and Recovery Pty Ltd (SUEZ) is seeking development consent to construct and operate the Botany Cogeneration Plant (BCP): a 'fit-for-purpose' facility which uses an energy recovery process to produce steam and electricity to offset existing energy requirements at the Orora Recycled Paper Mill at Matraville (hereafter referred to as the 'BCP, 'Cogeneration Plant' or 'Project').

The location of the Project is within the Orora Recycled Paper Mill premises (hereafter referred to as the 'Orora Recycled Paper Mill' or the 'Mill'), owned and operated by Orora Packaging Australia Pty Ltd (Orora) at 1891 Botany Road, Matraville, within the Randwick City Council local government area (LGA). The proposed location of the Project from a regional and local perspective is provided in **Figure 3** and **Figure 5**.

The Project is identified as State Significant Development (SSD), pursuant to clause 4.36 of Part 4 of the *Environmental Planning & Assessment Act 1979* (EP&A Act) as it meets the requirements of Clause 8 and falls under the provisions set out in Clause 20 of Schedule 1 of the *State Environmental Planning Policy (State and Regional Development) 2011* (SEPP SRD).

Clause 20 of Schedule 1 relates to development for the purpose of heat or electricity generating works or their co-generation using waste as an energy source that has a capital investment greater than $30 million. The Project falls within this definition and has a capital investment value in the order of $220 million. Accordingly, an Environmental Impact Statement (EIS) would be required to support the SSD Application for the Project. The permissibility and planning approval pathway for the Project is discussed further in **Section 5.0** below.

This Scoping Report has been prepared to seek Secretary's Environmental Assessment Requirements (SEARs) for the Project. These SEARs would allow the preparation of an EIS in line with the expectations of the regulators and in accordance with Part 4 of the EP&A Act.

This Scoping Report which has been prepared consistent with the *Scoping an Environmental Impact Statement - Draft Environmental Impact Assessment Guidelines* (DPE, 2017), includes:

- Applicant details (**Section 1.3**)
- Project details (**Sections 1.5, 2.0** and **3.0**)
- Community and other stakeholder engagement (**Section 4.0**)
- Strategic and statutory context (**Section 5.0**)
- Matters and impacts (**Sections 6.0** and **7.0**)
- Conclusion (**Section 8.0**).

1.1 Project Context and Location

The Project would involve the construction and operation of the BCP with a capacity to accept approximately 165,000 tonnes per annum (tpa) of fuel, designed to supply steam and electricity to the Orora Recycled Paper Mill to offset energy requirements. The Project would provide an on-site, fit for purpose energy solution to the Orora Recycled Paper Mill by utilising mill residuals alongside Processed Engineered Fuel (PEF) sourced from SUEZ's existing waste network.

The BCP is an energy project with the primary objective of supplying steam directly for Mill operations to offset the need for the Mill to use its existing natural gas fired boiler(s) for this purpose. The capability of the BCP to also generate electricity using a steam turbine makes it possible for the Project to continue to run even in periods of low steam demand from the Mill and to export any surplus electricity to the grid. By providing a constant and reliable energy source for Orora's operations, the Project would support recycled paper production at the Orora Recycled Paper Mill into the future, catering for its local and export markets.

1.1.1 Orora Recycled Paper Mill Site

The Project site is within the Orora Recycled Paper Mill premises located on Lot 14 Deposited Plan (DP) 1205936, Lot 1 DP182378, Lot 28 DP236738, Lot 33 DP236738 and Lot 1 DP 363611 at

1891 Botany Road, Matraville, within the Randwick City Council LGA. The site is owned and operated by Orora.

The Orora Recycled Paper Mill has been operating at the site for more than 115 years (under current and previous ownership) and is an integral part of the industrial landscape at Port Botany. The Mill has utilised fuel burning technology (natural gas) to fire its boilers to produce steam throughout its operations and has undergone various modifications over the years. The Orora Recycled Paper Mill site comprises the current operational paper mill facility (building #B9) on the western end of the site (including associated waste and product storage facilities) and a decommissioned paper mill facility (building #B8) on the south eastern corner of the site (Refer **Figure 4**).

The Orora Recycled Paper Mill operates under planning approval (MP05_0120), pursuant to the previous Part 3A State Significant approvals pathway, with the #B9 paper mill facility commencing operation in 2012. Recent modifications to the site layout include the demolition of redundant paper mill buildings, construction of a new waste water treatment plant and more recently, an application in relation to operational production.

The site operates under Environment Protection Licence (EPL) 1594 issued by the NSW Environment Protection Authority (EPA) and is within the area governed by *State Environmental Planning Policy (Three Ports) 2013* (Three Ports SEPP).

The Orora Recycled Paper Mill site is accessed via Botany Road. Under its production limit of 425,000 tonnes per annum, the Mill currently has the capacity to accommodate approximately 636 daily trips at the Mill site (336 heavy vehicle trips and 300 light vehicle trips). Vehicles travel around the site in a single (one-way) direction. The site operates 24 hours, 7 days a week (including paper waste transport onto site and process residuals disposal offsite).

1.1.2 Surrounding Land Uses

Land use surrounding the site comprises industrial zones to the south and northwest, Port Botany operations to the west (comprising container yards and logistics warehouses) and residential development to the east in the suburb of Matraville (Refer **Figure 5**). The site is located in close proximity to Port Botany (i.e. Brotherson Dock located approximately 500 m to the west) and Sydney Airport (i.e. the third runway is located approximately 3 km to the west) (Refer **Figure 3**). Nearest residential receivers are located approximately 130 m to the east of the site along Moorina Avenue, Matraville (Refer **Figure 4**).

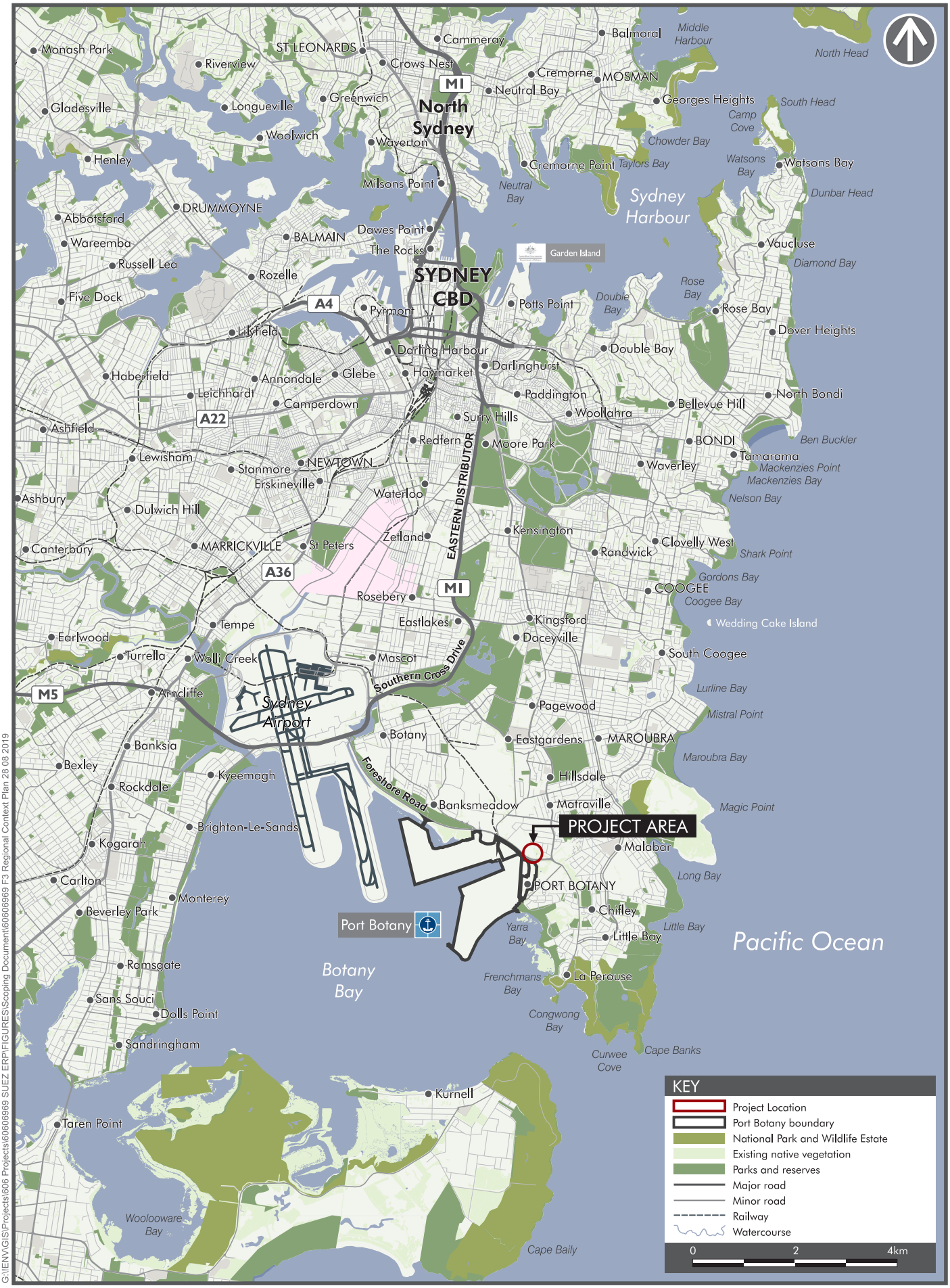
Botany Road runs along the southwestern boundary of the Orora Recycled Paper Mill site and is a key transport route that provides access to the site as well as to Port Botany. It forms part of a well-established road network that caters for heavy vehicle traffic that supports port operations and industrial activities in the Port Botany area.

The Candella industrial subdivision development (the Candella project) on Lots 1897-1901 Matraville has been approved by the Randwick City Council and is located adjacent to the eastern boundary of the site. The Candella concept plans show two to four storey buildings incorporating a range of commercial and industrial land uses. If developed, the Candella project would form an intervening land use between the Project and nearest residential receivers to the east. The Candella industrial subdivision includes upgrading a slip road from Botany Road which runs along the eastern boundary of the Orora Recycled Paper Mill site.

1.1.3 Project Site

The Project would be located on the footprint of the existing decommissioned paper mill facility #B8, within the Orora Recycled Paper Mill site. The Orora Recycled Paper Mill site has a total area of approximately 12.32 ha (Refer **Figure 5**).

Demolition of the #B8 facility and any associated site preparation works (e.g. contamination assessment and/ or remediation of historic soil contamination) would be undertaken by Orora under a separate approval process prior to site handover and these works do not form part of this Project. If required, site remediation would be carried out by Orora to a level suitable to support development of the Project (i.e. to support industrial land use development) prior to site handover.



G:\ENVGIS\Projects\606 Projects\60606969 SUEZ ERP\FIGURES\Scoping Document\60606969 F3 Regional Context Plan 28 08 2019

AECOM Imagine it. Delivered.

REGIONAL CONTEXT PLAN

SUEZ Botany Cogeneration Plant Scoping Report
Port Botany, New South Wales

FIGURE 3

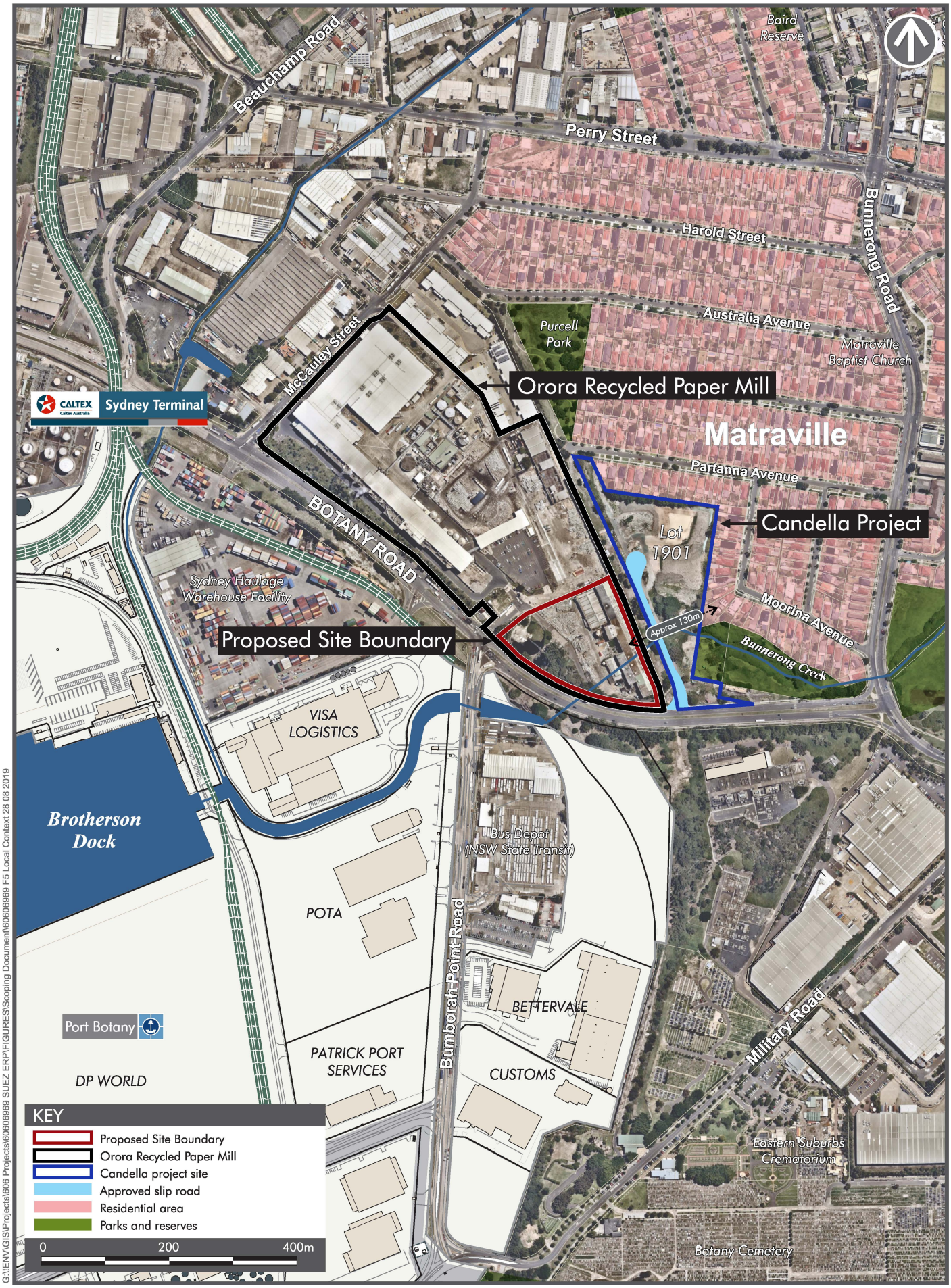
G:\ENV\GIS\Projects\606 Projects\60606969 SUEZ ERP\FIGURES\Scoping Document\60606969 F4 Existing Site Layout 28 08 2019

AECOM Imagine it. Delivered.

EXISTING SITE LAYOUT

SUEZ Botany Cogeneration Plant Scoping Report
Port Botany, New South Wales

FIGURE 4



G:\ENVGIS\Projects\606 Projects\60606969 SUEZ ERP\FIGURES\Scoping Document\60606969 F5 Local Context 28 08 2019

AECOM Imagine it. Delivered.

LOCAL CONTEXT

SUEZ Botany Cogeneration Plant Scoping Report
Port Botany, New South Wales

FIGURE 5

1.2 Project Need

The Orora Recycled Paper Mill receives used cardboard from supermarkets and other large retailers which is recycled into brown paper to make new cardboard boxes. Even in the cleanest recycled paper streams, there is some amount of non-hazardous material, primarily plastics in the form of packing tape, plastic wrap and polystyrene, plastic films and bags as well as bailing wire and strapping materials. These non-fibrous materials that cannot be recycled to make brown paper are currently directed to landfill but could be re-used as fuel to generate beneficial energy (steam and electricity) to supply the Mill.

Orora is committed to moving towards decarbonising its operations and seeking more sustainable practices to managing the waste materials from its operations. Orora plays a pivotal role in the recycling sector, supports emission reduction activities and seeks to reduce its overall carbon footprint by moving away from fossil fuel reliance.

As with all Australian manufacturing, the Orora Recycled Paper Mill is facing increasing operational pressure due to escalating natural gas and process residuals disposal costs in an environment where the recycled cardboard market is becoming increasingly competitive. Large fluctuations in gas pricing and difficulties in securing surety of gas supply have led Orora to evaluate alternatives to this fuel source. Importantly, Orora requires an energy solution that would accommodate the thermal and electricity requirements of its existing Mill without requiring significant augmentation of existing processes or facilities.

As a result, Orora has been actively exploring options for energy security with consideration of innovative fuel sources and technologies. An onsite Cogeneration Plant would provide an opportunity to secure the long-term energy needs for the Mill in a more sustainable way. To optimise the benefit of such a facility, the alternative fuel would need to have sufficient calorific value to generate sufficient steam to significantly offset the natural gas usage of the existing boilers.

The more steam that can be generated by alternate fuel supply means the less reliance on the gasfired boilers to support the Mill activities (and therefore, fewer costs). Availability and reliability of consistent fuel sources is of critical importance when assessing alternate fuels. Following consideration of a range of options, fuel derived from waste materials has emerged as the most reliable fuel source and economically viable option.

SUEZ has control over a secure waste supply and has extensive overseas experience in operating and managing similar energy facilities. Material suitable for use as fuel is readily available within SUEZ's extensive waste management network in NSW. A Cogeneration Plant would also provide the opportunity for Orora to divert from landfill greater than 90% of residuals currently generated from the Mill process, thereby further reducing costs. Having surety of energy supply and reduced process residuals disposal costs would support Orora’s business and facilitate its contribution to Australia’s economy whilst significantly improving overall sustainability outcomes.

1.3 The Applicant

The Applicant for the Project is SUEZ Recycling and Recovery Pty Ltd (SUEZ). SUEZ would be responsible for the design, construction, operation and maintenance of the BCP.

SUEZ has been operating for more than 160 years and is a global leader in water solutions, resource recovery and waste management. Today, SUEZ serves more than 65 million people as a trusted partner of organisations and Governments across five continents, including Australia. In Australia, SUEZ manages critical infrastructure such as the Prospect Water Filtration Plant in Sydney, treating 85% of Sydney’s drinking water as well as desalination plants in Melbourne and Perth.

SUEZ is an industry leader in delivering innovative environmental solutions for businesses, government and communities in support of a circular economy where present day waste streams can be a resource of tomorrow. In New South Wales, SUEZ is the market leader in resource recovery and manages the most extensive waste network infrastructure in the state, with a focus on recycling and recovery of critical resources.

SUEZ brings global expertise in developing energy recovery facilities, and has an exceptional track record of building, operating and maintaining energy projects across the world, with safety and environmental compliance always being SUEZ’s number one priority.

SUEZ currently operates 54 energy recovery plants globally, where more than nine million tonnes of fuel is safely treated, to create energy consumed by millions of people.

1.4 Project Objectives

The Project objectives are to:

- Provide a fit-for-purpose energy solution for the Orora Recycled Paper Mill in order to offset the cost of importing energy, minimise supply reliability risks and enhance energy security for the operation of the Orora Recycled Paper Mill now and into the future
- Assist Orora in moving towards decarbonising of its operations by utilising a more sustainable fuel source based on the re-use of existing materials and reducing its reliance on fossil fuels (natural gas), in line with its objective of sustainable practices and reducing its carbon footprint
- Establish a pioneering plant in Australia which fully complies with applicable regulations and standards
- Improve market competitiveness by achieving reduced costs whilst maximising sustainability at the Orora Recycled Paper Mill, supporting ongoing domestic recycling activities
- Reduce process residuals disposal costs and promote a circular economy by using mill residuals and PEF as fuel and thereby diverting these waste streams from landfill consistent with the waste hierarchy
- Manage potential environmental impacts associated with the construction and operation of the Project in an environmentally and socially responsible manner.

These objectives have guided the assessment of alternatives discussed in **Section 2.3**.

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 would involve the thermal treatment of two fuel types (Processed Engineered Fuel (PEF) sourced from SUEZ' existing waste network and mill residuals) to generate steam to supply Mill operations. Steam condensate would be returned from the Mill to the BCP creating a closed loop of water supply (apart from some top-up water). A portion of the steam generated by the BCP would be directed to a steam-fired turbine to generate electricity.

Key inputs to the BCP would comprise:

- Fuel feed stock – PEF and mill residuals
- Top-up water and process chemicals
- Start-up electricity and natural gas.

Key outputs from the BCP would comprise:

- Energy outputs (steam and electricity) – fed to the Mill after meeting Project energy requirements
- Residual streams (bottom ash and Flue Gas Treatment Residues (FGTR)) – disposed offsite
- Stack emissions – controlled and managed to meet applicable criteria.

An overview of the process is shown in **Figure 6** and **Table 2**.

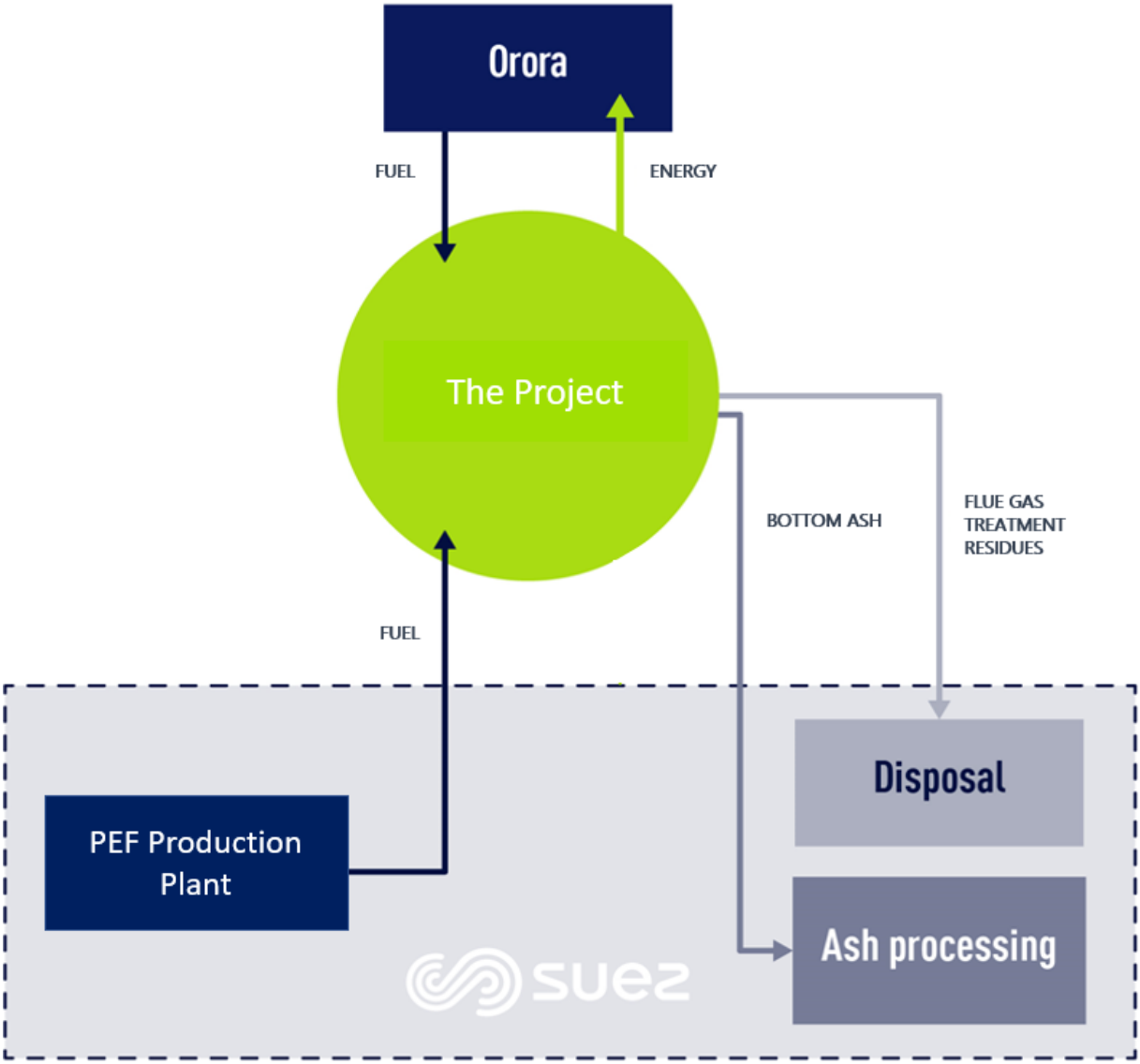


Figure 6 Project Operations Process and SUEZ and Orora Site Responsibilities

1.5.2 Project responsibilities

The Orora Recycled Paper Mill would be the sole energy off-taker for all steam and electricity produced through the Project, net of energy requirements to operate the BCP (Refer **Figure 6**). The Orora Recycled Paper Mill would also provide service connections for natural gas and electricity, and in times of low energy requirements would export any surplus electricity to the grid. All other utilities connections including water, sewer connections and wastewater discharge would be maintained separately by the Project independent of the Mill. The Project would be independently operated and maintained by SUEZ.

Project and site responsibilities between the Orora Recycled Paper Mill and SUEZ are summarised in **Table 2** and shown in **Figure 6**.

Table 2 SUEZ and Orora Recycled Paper Mill Responsibilities

Orora	SUEZ
• **The Project site -** The Project site is within Orora Recycled Paper Mill premises. The demolition of the existing #B8 building and site preparation works prior to site handover would be carried out by Orora separate to this Project. • **Fuel source** – Orora would provide mill residuals as a supplementary fuel source for the Project. • **Access to utilities** – Orora would provide connection to its existing 11 kilovolt electricity line and natural gas feeder (for start-up gas and top up energy if required) for the Project.	• **The Project** – SUEZ would have sole responsibility for operation and maintenance of the Project including for utilities not provided by Orora. • **Fuel source** - The SUEZ PEF Production Plant would be built at Chullora to provide fuel for the Project subject to separate planning and regulatory approvals. SUEZ would transport PEF to the site in containers. • **Bottom ash** – SUEZ would investigate options for the beneficial re-use of bottom ash subject to securing regulatory approvals and customers or otherwise dispose of bottom ash within its existing waste network. • **FGTR** - SUEZ would dispose of FGTR within its existing waste network.

It is noted that as well as being the operator of the BCP, SUEZ would:

- have control over its extensive waste network in sourcing appropriate source material to supply the PEF plant
- be the operator of the PEF Production Plant overseeing the resource recovery and quality control of PEF processing and production
- be responsible for transporting PEF from its proposed plant at Chullora to the BCP and transport of residuals from the BCP offsite
- operate licenced facilities for the ultimate disposal of residuals produced at the BCP (bottom ash, if required and FGTR).

In this way SUEZ would have full control over the waste collected, processed and ultimately used as fuel at the BCP and the offsite disposal of residuals produced at the BCP.

1.5.3 Approvals Context

In order for the Project to be developed a number of separate approvals would be required and would be progressed independently of the Project.

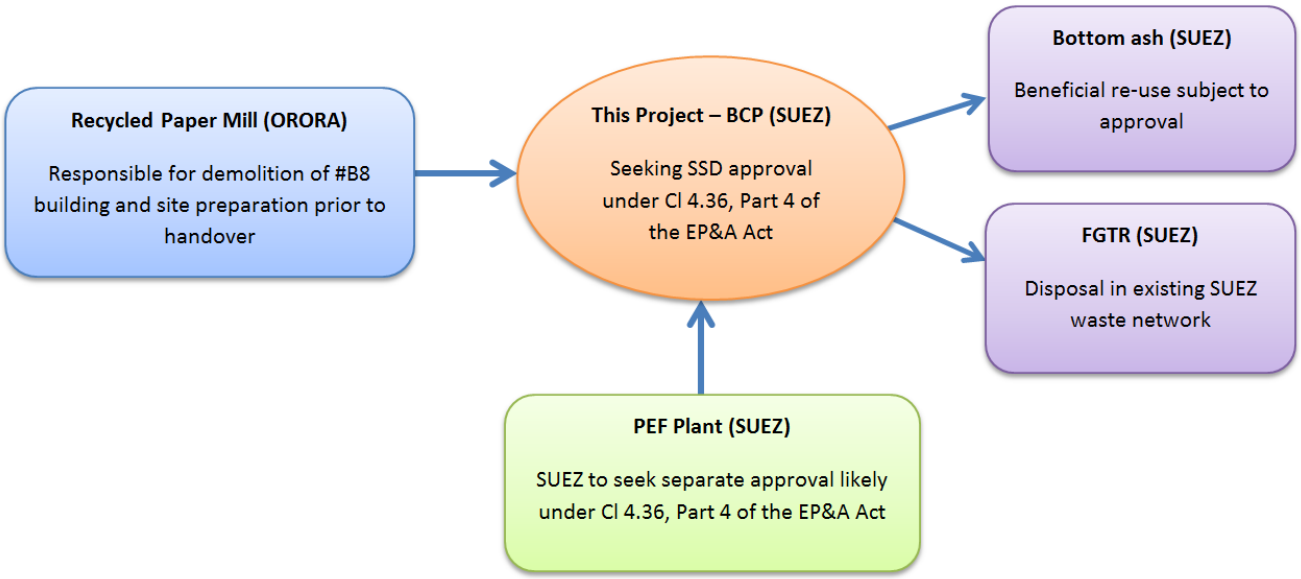


Figure 7 Approvals Context of Project

1.5.4 Fuel Feedstock

The BCP would be designed to accept processed fuel only. It would not be designed nor is there any intent to deliver unprocessed waste directly to this facility.

As per the waste hierarchy, feedstock for the BCP would consist of mill residuals and PEF produced following an extensive resource recovery process, thereby diverting only these 'non-recoverable' and 'non-recyclable' waste streams from landfill. Resource recovery would occur through upstream suppliers and at the PEF plant and Mill respectively. **Table 3** provides an overview of the fuel for the BCP which would be confirmed as part of the EIS.

Table 3 Fuel feedstock

	PEF	Mill residuals
Tonnes per year	130,000	35,000
% of feedstock*	80%	20%
Source of material	SUEZ PEF Production Plant at Chullora	Orora Recycled Paper Mill
Material	Dry waste materials such as non-recoverable timbers, textiles and non-recyclable plastics, sourced from: • Commercial and industrial (C&I) general solid (non-putrescible) waste (e.g. waste from retail and manufacturing suppliers such as cabinet makers) • Municipal solid waste (non-putrescible) (MSW) from council kerbside bulky waste clean-up (e.g. household furniture that cannot be reused) The PEF would not comprise any putrescible waste or metals	Residual fibres leftover from the cardboard recycling process (e.g. tape, stickers etc)

	PEF	Mill residuals
Resource Recovery and Quality Control (QC)	PEF would be subject to a thorough quality control process at the Chullora facility prior to transport to the BCP Material would be processed to remove any hazardous material such as electronic waste, batteries, hazardous chemicals as well as available recyclables (e.g. metals, cardboard and recyclable plastics). The material would be reduced to a particle size to between 20 mm and 150 mm, in order to meet the technical fuel requirements of the BCP	A quality control process at the Mill would ensure the mill residuals only contain acceptable materials prior to delivery to the BCP Fibrous material would be recovered for reuse in the Mill process. The mill residuals would be shredded and any metals removed prior to delivery In the unlikely event that hazardous materials are identified they would be removed prior to delivery When the BCP is shut-down for a period of greater than one day, mill residuals would be directed to the offsite PEF Plant for blending and brought back to the BCP in containers
Transport to the BCP	The PEF would be transported from Chullora in containers by heavy vehicles (approximately 21 vehicles per day). The option for rail transportation would also be investigated as part of the EIS	Mill residuals would be transferred to the BCP by an enclosed conveyer or by existing on site trucks servicing the Mill (to be confirmed as part of the EIS)

**The percentage of PEF to mill residuals is expected to vary slightly on an operational basis as a result of fluctuations in feedstock volume from the Mill. The fuel would be blended at appropriate ratios to meet the energy requirements of the Mill.*

Figure 8 and **Figure 9** below provide images of the proposed fuel sources at the BCP.

Figure 8 Image of typical Orora Recycled Paper Mill residuals (Source: Orora)

Figure 9 Image of typical unprocessed PEF material (left) and image of typical PEF material (right) (Source: SUEZ)

1.5.5 Key residuals generated by the Project

Table 4 provides an overview of the estimated key residual streams that would be generated by the operation of the BCP.

Table 4 Key residuals generated from operation of BCP

	Bottom Ash	FGTR
Tonnes per year	Approximately 21,700 tonnes	Approximately 5,900 tonnes
Source of material	A form of ash produced by the fuel combustion process. This material consists of the incompletely combusted and non-combustible components such as dirt and rocks	Residues from the flue gas treatment system (otherwise termed FGTR)
Expected classification*	General solid waste (non-putrescible)	Restricted waste
Transport off-site	Approximately three truck loads per day	Approximately one tanker per week
Disposal	*Preferred approach*: SUEZ is currently investigating options for the re-use of bottom ash (e.g. as road base for civil construction projects, as routinely used in Europe) *Contingency approach while approvals and market are identified/provided*: SUEZ waste facility at Elizabeth Drive, Kemps Creek	To a licensed facility, currently nominated as the SUEZ waste facility at Elizabeth Drive, Kemps Creek (which is the only facility in NSW licensed to accept restricted waste for disposal to landfill)

* in accordance with the *NSW EPA Waste Classification Guidelines*

1.5.6 Reference Facilities

SUEZ has nominated two reference facilities that would provide necessary data and information to inform the approvals process. The reference facilities are:

- Steag IKW Rudersdorf, Berlin, Germany. This facility utilises like for like technology and fuel as feedstock for energy generation and is of a similar size and scale. Technical data is available to inform environmental impact assessments (e.g. air quality/ noise modelling) and demonstrate the suitability and performance of the technology

- SUEZ Suffolk Energy from Waste Plant, United Kingdom. This facility is located at a similar distance from residential premises to the Project (approximately 160 m) and is referenced to demonstrate SUEZ's community engagement, operational performance and management capabilities at energy recovery plants. This is combined with the experience SUEZ has accumulated from decades of operating energy recovery plants around the world.

The reference facilities would provide real world examples of like for like fuel, technology and operating conditions to demonstrate the proven performance of the Project against European IED standards and of SUEZ as an experienced operator of such facilities. **Table 5** identifies which reference facility would be used for comparison to the proposed BCP.

Table 5 Reference Facilities

	The Project	Reference Facilities	
		Steag IKW Rudersdorf, Berlin, Germany	SUEZ Suffolk Energy from Waste Plant, United Kingdom
Plant operator	SUEZ		✓
Technology provider	Steinmuller Babcock Environment (SBE)	✓	
Technology type	Moving grate (direct combustion)	✓	
Size and scale	165,000 tpa	✓	
Distance from residences	Approximately 130 m		✓
Similar fuel composition	• PEF (general solid (non-putrescible) waste from C&I; and • Mill residuals from the Orora Recycled Paper Mill	✓	

1.5.7 Architectural Design

SUEZ has extensive international experience in designing energy recovery plants which take into account the surrounding landscape and land use setting to minimise intrusive effects on surrounding receptors. These have served to enhance the visual landscape character in the vicinity of the facility and have been accepted by the local community. The Project would be architecturally designed with reference to the site's location context and is further discussed in **Section 7.7**.

Examples of SUEZ facilities in the United Kingdom (UK) and France that have been subject to contemporary architectural design are provided in **Figure 10**.

SUEZ Suffolk (UK)
269,000 tpa

SUEZ OREADE (France)
190,000 tpa

Figure 10 SUEZ architectural design of facilities in the UK and France

1.6 Project Benefits

The Project would result in a number of benefits during construction and operation. The Project would:

- Provide direct and indirect economic and social benefits to the local region and NSW through:
  - The employment of a construction workforce of up to 400 full time equivalent (FTE) positions during the 24 month construction period
  - The creation of up to 30 FTE positions during the operation of the Project
  - Capital investment in the region of $220 million, creating the potential for sourcing project inputs from Australian providers, suppliers and subcontractors, including manufactured units from local and national equipment manufacturers
  - Requiring synergistic development of a dedicated PEF Production Plant at Chullora required for producing and supplying fuel for the Project. The PEF Production Plant would also draw investment and create local jobs
  - Enabling the use of residual waste in line with the *NSW Waste Avoidance and Resource Recovery (WARR) Strategy 2014-2021*. The PEF would be made from source separated and mixed commercial and industrial (C&I) waste received at the Chullora Facility. The C&I waste received at the Chullora Facility would be converted to PEF in accordance with the NSW Energy from Waste Policy Statement resource recovery requirements for energy recovery facilities. This residual feedstock (PEF and mill residuals) would be diverted from landfills prolonging the lifespan of existing landfill facilities in the region
  - Offsetting over 1.5 million Giga Joules of natural gas per year (enough to supply 70,000 homes), which would remain on the gas network improving local energy security
  - Offsetting around 63,000 MWh per year of grid electricity (enough to power 12,000 homes), which would remain on the electricity network improving local energy security
- Reduce the potential for impacts to the natural environment (e.g. land clearing including for utility connections) compared to a greenfield site, by utilising an existing brownfield industrial site for development and co-location close to the end user of the generated energy (i.e. the Orora Recycled Paper Mill)
- Facilitate the introduction of a proven technology in energy recovery and PEF production into Australia and provide a working model of a ‘circular economy’ where residual material (following recovery) becomes a resource and forms a win-win partnership between the waste producer and energy recovery company. This Project harnesses the embodied energy in residual materials

- Provide economic and sustainable benefits to Orora Recycled Paper Mill which would enhance its competitiveness and strengthen its long term viability as a domestic recycling operation through:
  - Reducing usage and dependence on grid electricity and natural gas for the operation of the Orora Recycled Paper Mill which would enhance energy security and reduce the carbon footprint
  - Realising significant cost savings through reduced energy costs and savings from waste disposal. The Project can divert greater than 90% of Orora Recycled Paper Mill process residuals currently sent to landfill and convert this material into energy
  - Allowing excess electricity generated to be fed into the grid to generate revenue in periods of low production demand.

2.0 Alternatives Considered

2.1 Energy Supply Options

The Orora Recycled Paper Mill requires a combination of steam, delivered to specific parameters, and electricity to support the paper production process. Currently, electricity is delivered direct from the national grid, and steam is produced onsite from four dedicated boilers, fired by natural gas.

Orora has secured a long term power purchase agreement for renewable electricity (via the grid), but due to the volatility of the gas market, no long term energy arrangement could be locked in to guarantee fuel supply for the existing gas fired boilers. To provide the energy required at the existing Orora Recycled Paper Mill, four fuel supply options were identified as being viable sources for providing steady thermal energy, being natural gas (existing situation), biomass, coal or selected waste.

Renewable sources such as wind and solar were not considered viable for direct connection to the facility as the energy supply would be too variable and dependent on weather conditions to supply steam for the Mill in a cost effective manner. Tapping into geothermal sources was not an option due to site conditions.

Biomass, while appropriate for use, is often difficult to procure and does not deliver the economic returns that can be secured through a Cogeneration Plant with a PEF feedstock (given the lower calorific intensity of biomass compared to PEF), particularly when considering the volume of steam required to significantly offset natural gas usage at the Orora Recycled Paper Mill.

The use of natural gas would mean continuing with the existing situation of an unreliable supply and fluctuating energy costs. Coal was discounted as a suitable option as it was considered to be inconsistent with Orora's corporate sustainability objectives.

Following investigation of existing energy recovery plants operated by SUEZ overseas, the development of a Cogeneration Plant using PEF, produced offsite, was identified as the most favourable option for the Orora Recycled Paper Mill. The embodied energy within PEF maximises energy production (per unit of fuel) compared to using a biomass feedstock. Utilising the right fuel means a smaller facility can provide sufficient thermal energy to meet almost 90% of the steam needs of the Mill. This option also facilitates the use of mill residuals, also containing embodied energy, but currently being sent to landfill.

2.2 Site Selection

This Project would provide a site specific customised solution for the Orora Recycled Paper Mill. The Project would be located on available land in the south eastern corner of the existing brownfield Mill premises, consisting of an area of suitable size to establish an economically viable Cogeneration Plant. The proposed Project footprint comprises the location of the existing decommissioned paper mill building #B8 which would be demolished to make way for the Project (Refer to **Section 1.1**). The Project site has good access to a main arterial road (Botany Road), is of adequate size, has readily available services from connections that already service the Orora Recycled Paper Mill and the surrounding area, including electricity, natural gas and water, which would facilitate easy establishment of a Cogeneration Plant.

The Project site also provides the advantage of being located on land already zoned for industrial purposes and co-located amongst other existing approved industrial uses (the Orora Recycled Paper Mill premises). As the site comprises disturbed / brownfield land, the Project would have the potential for reduced environmental footprint impacts compared to a location within a comparable greenfield site. Furthermore, co-location of the Project at the Orora Recycled Paper Mill site maximises efficiencies in the delivery of steam and would provide for synergies with the existing facilities including connection to existing services and reduced distance of transport for the mill residuals.

Given the site advantages provided at the Orora Recycled Paper Mill site and as SUEZ would not have to acquire land to enable the Project, other site options were not investigated.

2.3 Project Alternatives

As part of the development of the Project design, SUEZ (along with Orora) carried out scenario modelling of various design options to deliver the optimal outcome for the Project to meet Orora's specific requirements. The options considered are discussed below.

2.3.1 Fuel options

Feedstock from Orora

As the Project provides the opportunity for Orora to maximise the diversion of mill residues from landfill, technical analysis was carried out of landfill bound process residuals from the Mill. Currently fine rejects from the Mill are re-used for land application (compost). The redirection of fine rejects from land application to use as a waste fuel source does not align with the waste recovery and re-use principles of the waste hierarchy and as such is not proposed to be included in the Project.

The re-direction of mill residuals from landfill to use as a waste fuel source does, however, align with the waste recovery and re-use principles of the waste hierarchy and would be suitable in meeting the technical fuel requirements. Accordingly, mill residuals were therefore selected as a potential fuel source for the BCP.

Feedstock from SUEZ

SUEZ would separately produce and supply PEF for the Project, at an offsite PEF Production Plant at SUEZ's Chullora site subject to strict pre-processing and quality control procedures to ensure the material meets the fuel specifications of the BCP. This would ensure high reliability of fuel quality prior to delivery on to site.

As no putrescible waste would be used as fuel, there would also be minimal potential for odour generation at the site. The removal of hazardous materials and elimination of putrescible waste from the fuel would allow for more controlled flue gas management and more consistent composition of FGTR and bottom ash.

The relatively high calorific value of the PEF means that it is a suitable fuel to meet the energy requirements of the Orora Recycled Paper Mill. The high calorific value of the fuel also means that lower volumes would be required (compared to alternative lower calorific value fuels such as un-processed biomass or mixed waste) reflecting overall lower truck volumes to deliver the required fuel volumes compared to alternatives and the requirement for a relatively smaller scale/ sized Cogeneration Plant.

2.3.2 Technology Options

Once PEF and mill residuals (without non-putrescible waste) were identified as the most suitable fuel for meeting the Orora Recycled Paper Mill requirements, SUEZ sought the most appropriate technology suited to this feedstock by tapping into its extensive network of 54 energy recovery plants worldwide and experience in developing and operating such facilities to deliver site specific solutions.

For the Project, SUEZ conducted detailed technical analysis to select the most appropriate technology to meet Orora's specific circumstances. Considerations for selection of technology included:

- Energy generation requirements relative to the Mill's steam and electricity demand and associated efficiency of the plant
- Variability in steam and electricity demand during Mill operations responding to rapid steam ramp up and ramp down to accommodate the Mill's demands
- Plant reliability so there are no interruptions to energy supply to the Mill process
- Demonstrated capability in treating higher calorific value feedstock and design principles to accommodate the specific fuels identified
- Volume of source fuel required
- Facility footprint relative to the land availability at the Orora Recycled Paper Mill site.

SUEZ has nominated Steinmuller Babcock Environment (SBE), a specialist energy recovery plant technology provider (from chute to stack) as its Engineering Service Provider (ESP) for the Project.

SBE has been chosen as it holds a technical design appropriate for the chosen feedstock with certain elements such as a water cooled grate designed to withstand the high temperatures that come with a higher calorific value feedstock. Most energy recovery plant technologies are designed for the treatment of MSW, however the SBE design would be fit for purpose for using PEF as a feedstock. Importantly SBE has been previously used by SUEZ as an ESP in other overseas plants.

In addition, due to the fluctuations in steam demand, a cogeneration solution was found to be the most efficient outcome, which would direct energy generated from the Project for electricity production when the steam demand drops. In the absence of viable energy storage solutions, in periods of low steam demand and corresponding low electricity needs, the BCP would be an export electricity model (to the grid). The Project has been designed to be fit-for-purposes for the Orora Recycled Paper Mill to efficiently meet its specific energy requirements and operating conditions.

2.3.3 Plant Capacity Options

Technical feasibility studies have examined capacity options for establishing a Cogeneration Plant on the Orora Recycled Paper Mill site. SUEZ's specialist technical team and technical partner (SBE) confirmed that a Cogeneration Plant with a capacity to receive up to 190,000 tpa was possible at the site. A larger facility would generally provide better economies of scale during operations and deliver better unit savings, however, such a facility would also require a larger volume of fuel. The objective of the BCP is to meet the process steam demands of the Orora Recycled Paper Mill. A facility sized to receive approximately 165,000 tpa of fuel meets 90% of Orora's steam demand and was determined to be suitable for the site and Mill requirements taking into consideration the following factors:

- Higher capital expenditure requirement for a larger facility and a facility of greater size and scale
- Fuel supply quality – with a specification for fuel derived from non-putrescible sources. Fuel demand at the required quality would be easier to meet for a lower capacity facility
- Truck delivery impacts
- Energy efficiency – under a larger scenario, almost 23% of the steam production would be in excess of requirements and would need to be diverted to generate electricity.

2.3.4 Project Approach

The following approaches were considered for the Project:

- The do nothing option – not establishing the BCP
- Establishing the BCP.

The do nothing option – not establishing the BCP

The 'do nothing' option would involve no change to the existing operations of the Orora Recycled Paper Mill. It would continue to use fossil fuels (natural gas) to produce steam from its boilers and dispose mill residuals to landfill without realising any operational cost savings. The potential to reduce its energy cost, increase energy security, and operate an energy intensive industry primarily off the grid and move towards decarbonising operations whilst reducing waste disposal costs would similarly not be unrealised.

Without the Project and in the absence of alternative uses for the mill residuals, non-putrescible waste streams from the Mill would continue to be disposed to landfill placing ongoing pressure on the life of existing landfill facilities in the Sydney Region. Importantly, should the Project not go ahead, the opportunity to unlock the embedded energy from waste streams and introduce a proven technology for domestic energy recovery in Australia would not be realised.

Establish the BCP

As discussed in **Section 1.6**, the development of a Cogeneration Plant would involve significant economic and sustainability benefits to Orora as well as the local region and the state. Benefits include increased energy security and cost savings for the Mill, supporting ongoing domestic paper recycling activities ensuring recycling is undertaken in Australia; diversion of non-putrescible waste streams from landfill; the introduction of proven energy recovery processes and PEF technology into

Australia; and capital investment and job creation. For these reasons, the establishment of the BCP has been identified as the preferred option.

3.0 Project Description

Key elements of the Project are described in the subsequent sections. Indicative details of the proposed construction and operation of the Project and key project components have been provided. These details would be described in further detail and confirmed in the EIS along with details of standard operating scenarios, start-up/ shut down conditions and maintenance requirements.

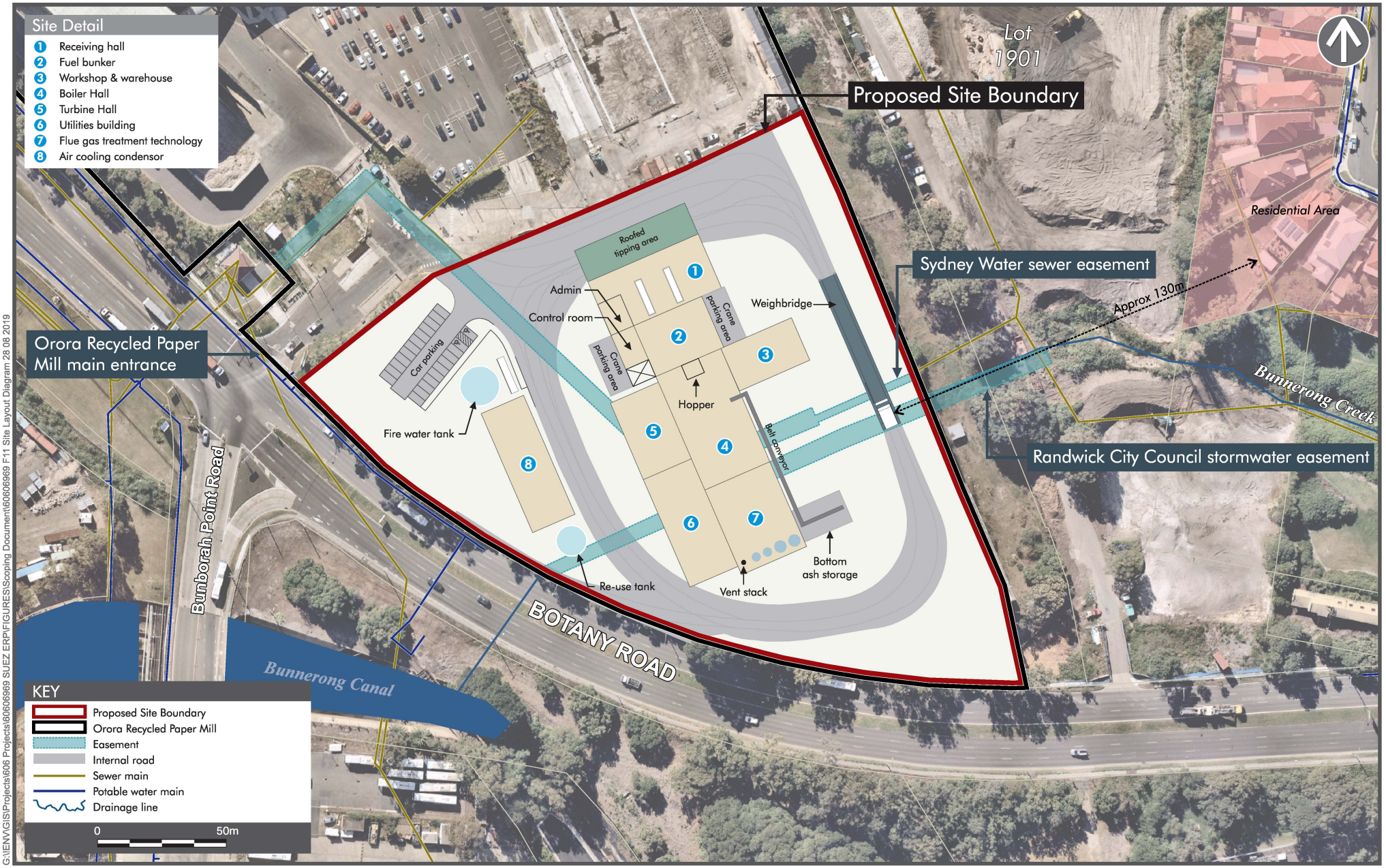
3.1 Plant Layout and Concept Design

An indicative plant layout is shown in **Figure 11**. The layout has been developed taking into account the relationship of facilities with neighbours and the Project site's interface with Botany Road.

Key design principles that form the basis of the indicative layout (and which would inform the concept layout to be assessed in the EIS) include:

- Secure site fencing with clear signage to indicate the Project site is operated independently of the Orora Recycled Paper Mill
- A design that optimises utilisation of the available footprint while maximising buffer distances with sensitive receptors
- Provision of a new access road connection to Botany Road (options considered to be confirmed during the EIS)
- A one way internal traffic flow system that maximises efficiency, safety and allows smooth flow of trucks within the site
- Provision of a dedicated weighbridge independent of the Mill to prevent bottlenecks and ensure operational efficiency
- Location of noisy equipment at a distance from residents
- Location of plant to minimise potential visual impacts to receptors located adjacent to the eastern side of the site
- A fuel bunker located in an enclosed receiving hall maintained at negative pressure to minimise the potential for dust/odour generation
- A 60 m vent stack
- Provision of staff car parks and truck parking areas for personnel
- Potentially incorporating a Visitor's Centre into the design with access to the public.

The architectural design of the Project would be informed by other SUEZ energy recovery plants located overseas (e.g. Suffolk) and the input of urban design and architectural specialists to provide a contemporary design that takes into account the site surrounds and receptors. The concept design would be progressed taking into consideration the outcome of the stakeholder consultation (refer to **Section 4.0**) and the Landscape Character and Visual Impact Assessment (refer to **Section 7.7**) to be carried out during the EIS.



G:\ENV\GIS\Projects\606 Projects\60606969 SUEZ ERP\FIGURES\Scoping Document\60606969 F11 Site Layout Diagram 28 08 2019

AECOM Imagine it. Delivered.

SITE LAYOUT DIAGRAM

SUEZ Botany Cogeneration Plant Scoping Report
Port Botany, New South Wales

FIGURE 11

3.2 Overview of Project Operation

Based on the Berlin reference plant, utilising the SBE technology and the fleet of reference plants operated by SUEZ, the Project is anticipated to include the following key processes as shown in **Figure 12** and **Figure 13** and as outlined below.

The Project would be operated 24 hours a day, 7 days a week. It would receive PEF 7 days per week

Reception and storage of fuel (Process 1)

PEF would be transported from the PEF Production Plant at Chullora in containers, weighed on a dedicated weighbridge, offloaded from the trucks into fuel bunkers located within an enclosed received hall. Mill residuals would be transferred to the BCP by existing on site trucks servicing the Mill or the option for a conveyer.

The following options would be investigated as part of the EIS:

- delivery of PEF via rail transportation (where feasible)
- delivery of mill residuals via an enclosed conveyer.

The enclosed receival hall would be designed with automated fast-acting roller doors and would be maintained at negative pressure to minimise potential dust/odour generation.

The mill residual material would be blended with the PEF material in the fuel bunker to deliver a more homogenous feedstock to optimise combustion.

A three-day supply of fuel would be stored in the fuel bunker to support continuous BCP operation.

Within the fuel receival hall overhead cranes with mechanical grabs would move the fuel into the combustion system.

Combustion system (Process 2 and 3)

Feedstock would be fed into the furnace from the fuel bunker and combusted on a grate system incorporating combustion air injection. The combustion control system is designed to achieve high quality combustion, burnout and emissions outcomes, by controlling fuel feeding, grate movement and air supply. An auxiliary gas burner would be provided for start-up fuel ignition and to maintain optimal combustion conditions.

Steam generation and distribution (Process 3) and electricity generation (Process 4)

Steam would be generated in a boiler incorporating a water/steam cycle to provide direct steam supply to the Mill to support 24 hour operation. By means of a steam turbo-generator, electricity for use in both the BCP and the Mill would also be generated. Surplus electricity that is not utilised by the Mill during downtime when the demand dips would be fed to the local electricity grid by Orora. Steam condensate from the Mill would be returned to a deaerator in the BCP and reused for steam generation.

Fuel gas treatment (Process 5)

Flue gas from the BCP would be treated using an air emissions control system that consists of dry flue gas treatment, a bag house filter and a non-catalytic nitrogen oxides (NO_x) reduction unit. The flue gas treatment and air emissions control system would be designed based on the Berlin reference plant to ensure stack emissions meet the upper limit values stipulated in the latest BREF WI (December 2018) and IED consistent with international best practice.

Bottom ash and FGTR management (Process 6 and 7)

Bottom ash and FGTR would be generated from the operation of the BCP. Bottom ash from the furnace would be collected in a bottom ash skip and optimally reused in road construction and civil works, subject to obtaining regulatory approval. Until approvals are obtained for beneficial reuse, bottom ash would be sent to the SUEZ Elizabeth Drive Kemps Creek general solid (non-putrescible) waste landfill.

Based on current analysis FGTR is classified as restricted waste and would be collected at the fabric bag filters, stored in a silo within the flue gas treatment technology and disposed offsite to the SUEZ

Elizabeth Drive Kemps Creek facility, which is currently the only waste disposal facility in NSW licensed to accept restricted waste.

Control and Supervision

The BCP would be fully automated incorporating the latest online emissions monitoring technology, continuous monitoring of operational performance and automatic shut off mechanisms where pre-programmed limits are triggered for key parameters. The operating system would incorporate a number of layers of contingency to detect system changes and respond to potential incidents. Regular monitoring, alarms and standard operating procedures would be in place to ensure that emissions are monitored continuously and responded to appropriately (e.g. through automatically increasing lime dosing levels) should the risk of related emissions exceedances or actual exceedance be detected.

SUEZ has global expertise managing and operating energy recovery plants consistent with the BREF whilst using the latest technology. The BCP would operate to meet BREF requirements and operating and management practices successfully employed by SUEZ across its global fleet. Control mechanisms at the BCP would not only apply at a site basis, but data would be rolled up to the SUEZ group level (energy division) for monitoring and support, considering lessons learnt from operations across the SUEZ fleet.

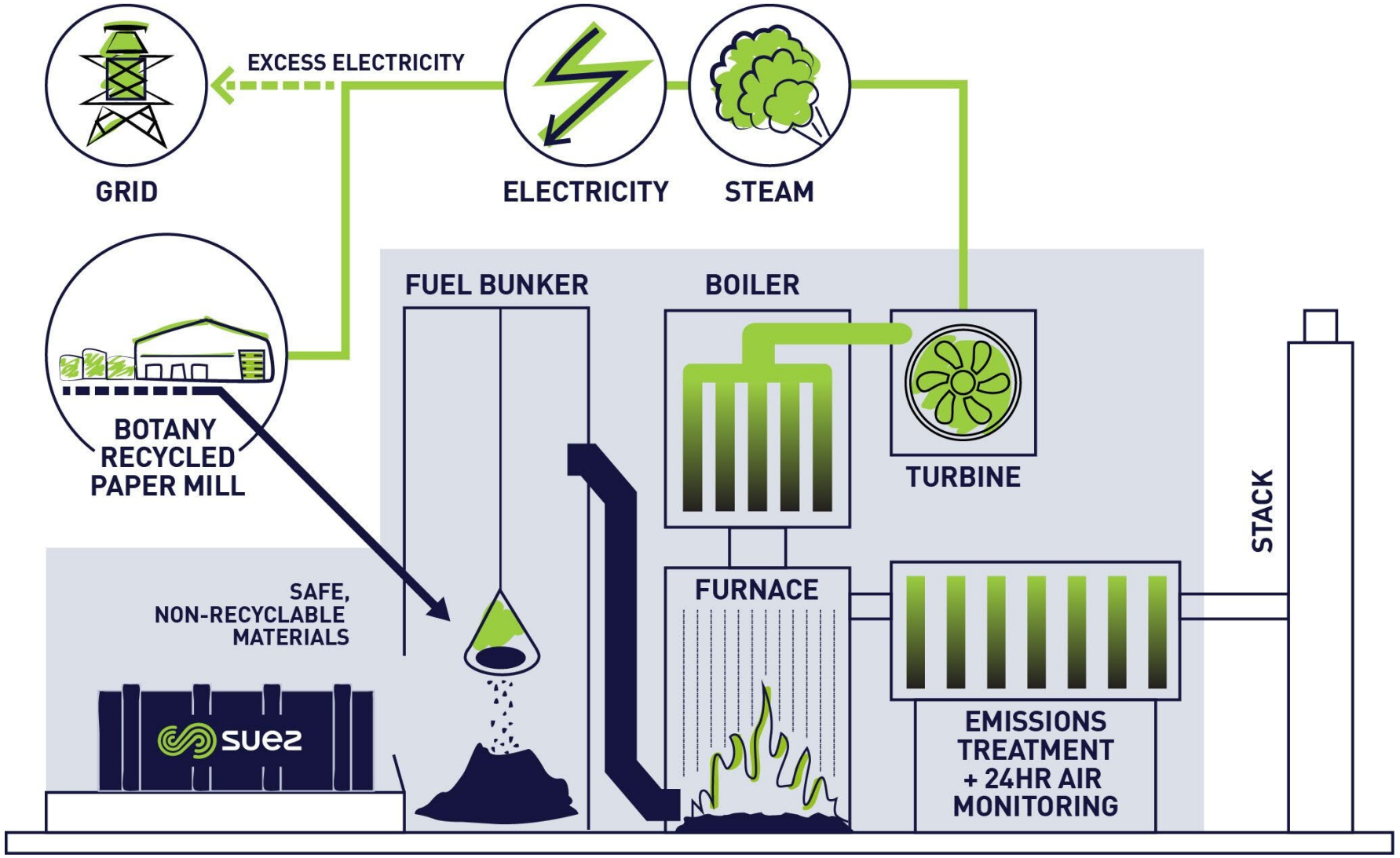


Figure 12 Overview of the BCP Process (source: SUEZ)

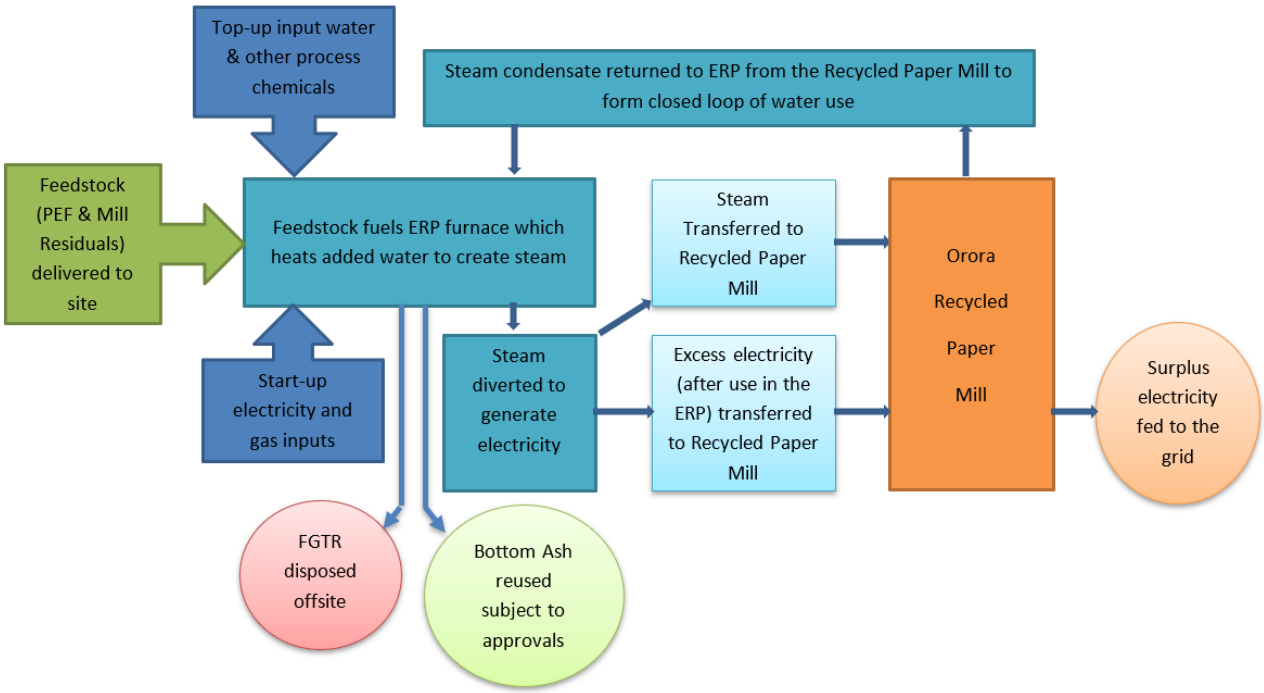


Figure 13 BCP Process Flow Diagram

3.3 Construction Activities

Construction planning for the Project is to be confirmed however it is anticipated that construction would take around 24 months, with commissioning a further eight months.

An indicative Project timeline is provided below which would be confirmed in the EIS:

- Project construction: Estimated to begin end of August 2021 and be complete by August 2023
- Commissioning: Estimated to begin in mid-September 2023 and be complete by April 2024
- Project operation commences: estimated in April 2024.

Construction activities for the Project are expected to include:

- Site preparation activities including establishment of construction and traffic management measures, construction compound to allow for temporary site facilities and amenities, laydown areas and storage for plant and materials
- Building construction and process equipment installation
- Cold and hot commissioning
- Construction compound and workforce demobilisation.

Construction of the Project would require various elements that would be prefabricated offsite and transported to the site using heavy and over-size load vehicles. Considering the limited laydown space available at the Orora Recycled Paper Mill premises, local laydown/ warehousing may be required during the construction period and would be sourced in the Port Botany area.

The EIS would provide an estimated construction program for the Project.

3.4 Workforce

It is anticipated that the construction and operation of the Project would generate the following full time equivalent (FTE) positions:

- The employment of a large construction workforce up to a peak of 400 FTE positions during the construction of the Project which would be around 24 months
- The creation of up to 30 permanent FTE positions during the operation of the Project.

3.5 Hours

It is intended that construction activities would be scheduled during standard construction hours as specified in the *Interim Construction Noise Guideline* (DECC, 2009) where reasonable and feasible to do so. These hours are:

- Monday to Friday 7am to 6pm
- Saturday 8am to 1pm
- No work on Sundays or public holidays.

The EIS would identify activities or instances where works outside of standard construction hours may be required, e.g. for vent stack installation.

Once operational the Project would operate 24 hours per day, seven days per week.

3.6 Estimated Capital Investment Value

The estimated capital expenditure to establish the Project would be in the order of $220 million subject to detailed costing. This cost excludes land acquisition which would not be required as the site would be leased from Orora. A capital investment value estimate prepared by a qualified quantity surveyor would accompany the SSD application.

4.0 Engagement with Communities and other Stakeholders

SUEZ is committed to engaging in a transparent and meaningful way with stakeholders at all stages of the design and environmental impact assessment process. This includes surrounding residents and businesses, members of the broader community, regulatory agencies and Government (including elected representatives), local Councils and other interest groups (e.g. utilities and service providers, peak bodies, industry associations), and media.

SUEZ has engaged Elton Consulting to undertake engagement activities to inform the preparation of this Scoping Report and to provide a framework for ongoing engagement activities in the next stage of the Project's development and EIS preparation.

A range of consultation activities and review of projects in the energy recovery, energy and industrial sectors has been undertaken to identify key issues for the community and regulatory agencies to inform the scoping of environmental issues as part of this report. In particular this has helped inform the identification of key issues to be assessed in the EIS and the level of assessment and consultation to be undertaken as part of EIS preparation. The environmental issues and assessment scopes identified in this report have been informed by:

- Early and targeted consultation carried out to establish regulatory expectations on project design and environmental impact assessment requirements, gauge community attitudes towards the Project and energy recovery plants in particular, and identify key issues of concern to the community and regulators that would require further design, assessment and consideration as part of project development and EIS preparation
- A review of comparable projects proposed and/ or approved in New South Wales or 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.
- Lessons learnt from SUEZ's fleet of overseas plants, in particular key community issues and regulatory challenges and how these have been managed and addressed through the design and assessment of the plants including ongoing performance and compliance management
- The review of site environmental management, community consultation and complaints records at the Orora Recycling Paper Mill site to determine site constraints and issues of importance to neighbours directly surrounding the Project site.

The objectives of SUEZ's consultation and engagement approach, actions carried out up to the time of preparation of this report, and stakeholders and key issues identified are outlined below.

4.1 Consultation Objectives

SUEZ is committed to engaging with relevant stakeholders (including community) to help identify potential or perceived impacts of the Project early and to identify and incorporate design and control measures that avoid and/or mitigate risks and issues where possible. To achieve this objective, SUEZ would undertake consultation with the aim of providing stakeholders with an opportunity to have meaningful involvement by expressing their views and concerns.

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

- Initiate and maintain open and transparent communication
- Provide an understanding of the regulatory approval process to stakeholders
- Provide information about the Project to create awareness and help the local community understand the key features of the Project, including plant, fuel, process and the technology employed
- Actively engage with stakeholders and seek local information and input into the Project by providing a range of opportunities for stakeholders to identify key issues for consideration and provide feedback on the Project design and mitigation measures

- Work with stakeholders to identify strategies to realise the benefits and minimise potential impacts of the Project.

4.2 Community and Stakeholder Engagement

The DPE 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 EISs for State significant projects. SUEZ has developed an approach based on the DPE draft guideline.

SUEZ's approach includes conducting detailed stakeholder analysis; actively engaging government, community and key stakeholders; and seeking feedback at key points of the process. A range of stakeholder engagement tools and techniques would be employed and would include but not necessarily be limited to:

- Email/ letter/ phone calls/ door knocks
- Meetings/ focus group discussions/ workshops/ forums
- Media statements/ advertising
- Website; newsletters, notifications and fact sheets
- Social media and media monitoring
- Establishing a 1800 24/7 community hotline
- Orora Community Liaison Group (already existing and functional)
- Facilitating site visits
- Establishing an information centre
- Community events/ pop-ups/ information and feedback sessions/ drop-in.

A draft implementation plan outlining the above measures has been prepared to meet the key consultation objectives outlined in **Section 4.1**.

4.3 Consultation Activities Undertaken to Date

An outline of consultation activities undertaken to date is provided below. Key issues identified through consultation activities which have informed the scoping of issues in this report are described in **Section 4.7**.

4.3.1 Government Agency Meetings

One-on-one meetings with agencies were carried out in order to brief agencies about the Project including design, assessment approach and timing and to seek input in relation to regulatory expectations, environmental assessment requirements and consultation requirements. Meetings were held with the following agencies:

- DPIE: briefings on 29 November, 4 March, 11 April, 2 May, 29 May, 17 June and 4 July 2019.
- EPA: briefings on 29 November, 4 March, 11 April and 2 May and 5 July 2019
- CASA, Air Services and Department of Infrastructure and Regional Development: briefing on 13 May 2019
- Randwick City Council on 1 July and 1 August 2019
- Bayside Council on 4 July 2019
- (Federal) Department of Infrastructure, Regional Development and Cities on 13 May 2019
- Airservices Australia on 13 May 2019

4.3.2 Other Stakeholders

Due to the proximity of the Project to Sydney Airport, Sydney Airport Corporation Limited was briefed on the project on 2 May 2019.

4.3.3 Community Engagement

Elton Consulting was commissioned by SUEZ to carry out mixed method research to explore resident perceptions, knowledge and attitudes to alternative fuel technologies, business and industry waste, social and environmental expectations of business, and their communication preferences early in 2019. The research involved four focus groups with more than 30 participants and phone survey research targeting approximately 222 residents residing in close proximity to the Orora Recycled Paper Mill (within two km) and in the wider local area (within two to five km).

At the time of writing this report, SUEZ was preparing to undertake a suite of community engagement activities aligned to the submission of the scoping report which all provide an opportunity to both inform and seek feedback.

These activities include:

- Launch of a project-specific website
- Doorknock of neighbouring properties to the Orora site
- Distribution of at least 1,300 project flyers to local residents and businesses
- Briefings of elected officials including councillors and MPs
- Orora Community Liaison Group meeting and other relevant local resident committees.

4.4 Consultation Activities Proposed During the EIS phase

Consultation activities (outlined in **Section 4.2**) would be implemented during the preparation of the EIS. Consultation activities during the EIS phase would be staged to occur in line with the environmental assessment process.

Consultation activities during EIS preparation would focus on addressing the issues raised by stakeholders as identified in **Section 4.7** and new issues that emerge during the process through the communication of design and assessment information. Consultation would be undertaken as environmental impact information comes to hand (as technical assessments progress) so that there can be a meaningful exchange of information with stakeholders, and feedback received would inform the assessment and development of mitigation measures. Consultation with agencies would focus on keeping agencies up-to-date with technical impact assessments and assessment findings to ensure these are in line with regulatory standards and expectations.

Elton Consulting has carried out an analysis of stakeholders that would have interest in the Project, identifying a range of Government and community stakeholder groups to be consulted during the EIS preparation phase. This list is updated as feedback is provided during engagement activities. Stakeholders are listed in subsequent sections.

4.5 Government Agencies, Local Government and Non-Government Stakeholders

Consultation with relevant government agencies and non-government stakeholders would be undertaken during preparation of the EIS and would continue for the duration of the Project. Some of the key government agencies and non-government stakeholders would include:

- Department of Energy and Environment (Australian Government)
- CASA (Australian Government)
- DPIE
- NSW EPA
- Energy NSW

- Clean Energy Finance Corporation
- Department of Primary Industries
- Office of Environment and Heritage
- Transport for NSW
- Roads and Maritime Services
- Randwick City Council
- Bayside Council
- NSW Health
- Western Sydney Local Health District
- NSW Fire and Rescue
- Sydney Water
- Port Authority of NSW
- SafeWork NSW
- AusGrid
- Sydney Airport.

Other stakeholders may be identified during the preparation of the EIS and consulted as required. SUEZ would undertake consultation with the nominated stakeholder agencies at key stages during the development of the EIS and the results and outcomes of this consultation would be detailed in the EIS and considered in design.

4.6 Community Consultation and other Stakeholder Consultation

Community, business associations, and non-Government organisations identified for engagement include, but are not limited to:

- At least 1,300 residents and businesses surrounding the Orora Recycled Paper Mill site
- Orora Community Liaison Group
- Matraville Precinct Committee
- Port Botany Community Consultative Committee
- Botany Industrial Park Community Consultative Committee
- La Perouse Local Aboriginal Land Council
- Matraville Chamber of Commerce
- Waste Contractors and Recyclers Association of NSW
- Waste Management and Resource Recovery Association of Australia (WMRR)
- National Waste and Recycling Industry Council (NWRIC)
- Total Environment Centre (TEC)
- Botany Bay and Catchment Alliance (BBACA)
- Bayside Enterprise Centre
- La Perouse Land Care Council

SUEZ would continue to undertake consultation with the nominated stakeholder agencies during the preparation of the EIS through to approval via the methods listed in **Section 4.2**. The results and

outcomes of this consultation would be presented in the EIS. Key issues and concerns identified would be considered and addressed where relevant in the preparation of the EIS.

4.7 Community and Stakeholder Issues

Taking into consideration that the Project would employ new technology and recognising the critical importance of community consultation and engagement in developing a successful Project, SUEZ has initiated early engagement to obtain stakeholder feedback and conducted a review of stakeholder concerns from the Project (and similar projects) to identify key areas of community concern.

The key stakeholder issues identified through this process are discussed below and have informed the scoping of environmental issues for the EIS (refer to **Section 6.0**).

4.7.1 Key Feedback from Engagement Activities Undertaken to Date

The activities undertaken up to the time of preparation of this Scoping Report are summarised in **Section 4.3**. The issues identified through those activities have informed the scoping of environmental issues in this Scoping Report and facilitated refinement of the communications and engagement approach to enhance its effectiveness going forward.

Community Issues

The mixed-method research into community perceptions and attitudes based on survey and focus groups identified the following key issues:

- Strong support for businesses/industry moving away from single use products, taking responsibility for their products end to end, making more productive use of valuable resources and being innovative
- Support for businesses/industry to be ‘good citizens’ or ‘good neighbours’ through the responsible management of waste, air quality, pollution and energy use
- General lack of awareness of alternative energy recovery options
- 84% of respondents saw energy recovery plants as providing benefits such as reducing environmental impacts and creating a resource from waste.
- Three quarters of survey participants expressed support for an onsite processing facility for businesses/industry to divert waste away from landfill and convert it to fuel
- More than nine in ten survey participants felt that alternative ways of managing waste within the Sydney region (such as energy recovery plants) should be considered
- When considering establishment of an onsite alternative waste facility - proximity to residential and recreational areas, the scale of the facility’s operation, and volume and type of waste to be processed were raised as key concerns
- Concerns about impacts of an onsite processing facility focused primarily on pollution, air quality and human health, with some respondents raising smell/odour and traffic congestion
- Methods of communication regarded positively by participants included receiving information in the community and online (e.g. through letterbox drops, business website, Council, talking to members of community groups) and to a lesser extent face to face consultation (e.g. such as participating in a community liaison group). Most indicated that they would be satisfied with communication via social media, particularly Facebook.
- Open and upfront communication from businesses with the community on any development plans

Key community concerns on environmental aspects of the Project identified to date based on community engagement activities comprise:

- Emissions
- Air quality / dust / odour
- Noise and vibration

- Traffic
- Property values
- Health
- Ash management
- Visual amenity

The key issues that would be assessed in the EIS reflect the key concerns identified in community feedback and are discussed in **Section 7.0.**

Government Agency and other Stakeholder Issues

Key issues raised by regulatory agencies at briefings related to:

- Adequate demonstration of reference design and data to support technology and performance
- Assessment of air quality emissions against best international practice and other key issues against established assessment standards
- Compliance with the NSW Waste Policy including the EPA Energy from Waste Policy
- Early and meaningful community engagement and consultation
- Interaction between Orora operations and the BCP on site
- Relationship between the Project and interrelated proposals (i.e. the PEF Production Plant) which are subject to independent environmental and planning approvals
- Option to transport PEF to the BCP by rail
- Utility and service connections
- The assessment of key issues including: air quality, human health, noise, visual, traffic, hazard & risk, waste management, greenhouse gas efficiency, socio-economic, soil and water, ecology and heritage (Aboriginal and Non-Aboriginal).

Project description, consultation and statutory matters identified in agency feedback are discussed in **Sections 1.0** to **5.0** of this report and would be further detailed in the EIS. The key issues that would be assessed as part of the EIS reflect the issues identified by regulatory agencies and are further detailed in **Section 7.0**.

4.8 Ongoing community Engagement

During construction and once the BCP is operational, SUEZ would continue engage with the local community and stakeholders in regard to construction and operational matters.

Methods would include:

- Distribution of newsletters and operational updates to more than 1,300 local residents at key milestones
- Specific web presence of the BCP
- Discussion of Project operations with the Orora Community Liaison Group and Port Botany Community Consultative Committee
- Social media and media monitoring
- 1800 24/7 community hotline
- Information centre
- Briefings with other stakeholders and community groups as required.

4.9 Analysis of Key Stakeholder Issues on Other Comparable Projects

The following projects were reviewed to provide an understanding of stakeholder issues raised on comparable projects and the approach proposed by SUEZ to comprehensively address the issues identified:

- Australian Paper Waste to Energy Proposal, Maryvale Paper Mill in the Latrobe Valley Victoria (Approved by EPA Victoria and Latrobe City Council)
- East Rockingham (approved by Western Australia EPA)
- SUEZ Suffolk reference plant
- SUEZ Darwen Lancashire
- Orora Paper Mill Site
- Berrima Cement Works – Use of Waste Derived Fuels
- Visy Tumut Mill Expansion to increase Paper Manufacturing Capacity (concept approval for non-standard fuels)

In addition the Dial-a-Dump Energy from Waste Project at Eastern Creek, although not comparable to this Project, was reviewed to ensure issues raised in respect of that project have been included in the broad suite of potential community concerns identified.

The range and priority of key environmental issues raised by the stakeholders differed from project to project and the key issues in **Table 6** are not presented in any particular priority of importance. Consultation on the key community concerns identified would be undertaken in accordance with the strategy and methodologies specified previously in this section.

Table 6 Summary of key issues from energy recovery plant projects

Key issues	How it would be addressed in the EIS
Human Health Risk	A detailed Human Health Risk Assessment utilising Air Quality Impact Assessment findings and data from the nominated reference plant in Germany would be included in the EIS. Refer to **Section 7.3**.
Air quality concerns	The EIS would include a detailed Air Quality Impact Assessment using data from the nominated reference plant in Germany and with reference to best international practice standards. This analysis would be combined with operational data from other activities in Europe, using similar feedstock. Refer to **Section 7.2**.
Suitability of Location	**Section 2.2** provides reasons for selection of the existing Orora Recycled Paper Mill site for the Project and this would be further detailed in the EIS.
Uncertainty surrounding proposed operational and monitoring procedures	The technology used by the Project would be similar to that used at the nominated reference plant in Germany (Refer to **Section 1.1**) and would be presented in the EIS. A new PEF Production Plant would be built at Chullora (separate to this Project) to produce fuel of a consistent quality that meets the fuel technical specification. The operational and monitoring procedures that have been tried and tested in the German reference plant would serve as the minimum benchmark. In addition, SUEZ have a fleet of facilities which would be used to demonstrate operational expertise and return on experience.

Key issues	How it would be addressed in the EIS
Traffic impacts	The EIS would include a Traffic and Transport Impact Assessment which would assess the impacts of: • heavy vehicle transport of PEF to the Project site and the offsite transport of FGTR and bottom ash • construction traffic impacts and interactions with existing vehicle movements at the Orora Recycled Paper Mill site. Refer to **Section 7.6**.
Odour concerns	The fuel to be used at the BCP (PEF and mill residuals) does not include any putrescible waste, as such there is a low potential for odour generation. However, the design of the plant would include measures to minimise offsite odour generation including the fuel receiving hall being fully enclosed maintained at negative pressure. Odour management would be addressed as part of the Air Quality Impact Assessment. Refer to **Section 7.2**.
Impacts on property and land use	Property and land use impacts would be considered as part of the socio-economic impact assessment to be prepared for the EIS, with consideration to land zoning and permissible land uses. The socio-economic assessment would be informed by the other technical assessments carried out for the EIS (air quality, human health, noise, visual and traffic) which have the potential to impact on surrounding receiver amenity and land use.
Applicants operational history	SUEZ is a global company with expertise in water and waste management with an established track record internationally and in Australia. SUEZ currently operates the Prospect Water Filtration Plant in NSW which supplies 85% of drinking water to Sydney. SUEZ also operates the only restricted waste facility in NSW (Kemps Creek landfill) under an EPA license and has an established working relationship with EPA. SUEZ also operates 54 Energy Recovery Plants worldwide, including in Europe where the plants comply with the European Union Industrial Emissions Directive, and has implemented initiatives to continually improve environmental performance.
Gaps in EIS related to inadequacy, uncertainty, quality and accuracy	The EIS would include conservative and robust impact assessments of key issues against best practice and established assessment standards and regulatory requirements and formulate reasonable and feasible mitigation measures to avoid, mitigate and manage potential impacts. The scope of key issues to be covered by the EIS and the assessment methodologies proposed, are provided in **Section 7.0.** The assessment would be underpinned by technical data from the like-for-like reference plant in East Berlin, Germany, similar facilities operating globally and SUEZ's operational experience and data from I's existing fleet of facilities.
Noise concerns	The EIS would include a conservative and robust Noise Impact Assessment which addresses operational and construction noise and vibration generated by the proposal. Refer to **Section 7.10**.
Visual impact	The EIS would include a Landscape Character and Visual Impact Assessment and obtain feedback from the community on the design of the plant.

Key issues	How it would be addressed in the EIS
Non-compliance with international and/or national regulations	An assessment against applicable policies, regulations and guidelines would be undertaken during the EIS. The initial review is provided in **Section 5.0**. The Project would be designed to meet best practice international standards for emissions and to ensure compliance with the NSW Waste to Energy Policy.
Social and economic impacts	The EIS would include a socio-economic impact assessment which would be informed by consultation and engagement activities and technical assessments of other key issues (such as air quality, human health, noise, visual and traffic). Refer to **Section 7.9**.
Inadequacy of technology	The technology used by the BCP would be similar to that used at the nominated reference plant in Germany and would be described in the EIS. A new PEF Production Plant would be built at Chullora (separate to this Project) to produce fuel of a consistent quality that meets the fuel technical specification. SUEZ operates a fleet of similar facilities globally. The operational and monitoring procedures that have been tried and tested in the SUEZ facilities would serve as the benchmark.
Impact of Project on waste management methods and facilities	An assessment against the NSW Energy from Waste Policy and other applicable policies would be carried out in the EIS. The fuel for the BCP (PEF and mill residuals) would be sourced from waste streams that would otherwise go to landfill. This would be discussed in the EIS with particular reference to the significant effort being employed by SUEZ to, manage resources in accordance with the waste hierarchy. Diversion of recyclables at the PEF Production Plant and recovery of embodied energy at the BCP would help extend the life of landfills in the Sydney region.
Inadequate community consultation	SUEZ has proactively developed a comprehensive consultation and engagement approach to inform the preparation of this report and ongoing consultation activities during the preparation of the EIS as described in **Section 4.0**.
Air quality monitoring and publication of real time data	The latest technology and best management practices would be used to monitor emissions from the BCP in line with EPA and European Industrial Emissions Directive requirements. SUEZ has extensive experience operating a range of monitoring equipment at numerous facilities globally. Monitoring equipment and protocols from the like-for like reference plants in Germany and Suffolk would be used, employing the latest available technology for continuous emission monitoring equipment for the Project. Continuous monitoring of emissions are discussed in Section 3.2. SUEZ is committed to comply with emission limits, monitoring and data publication requirements stipulated by the EPA to demonstrate compliance to specified standards and make emissions data publicly available in a transparent and timely manner. Further details of air quality monitoring would be described in the EIS.

Key issues	How it would be addressed in the EIS
Ash management process	Ash residues generated by the BCP would be from the following sources (Refer to **Section 3.2**): • Bottom ash from the Moving Grate Furnace • FGTR. Refer to Section 1.4.5 for further information on bottom ash and FGTR. Waste management would be addressed in the EIS as outlined in **Section 7.5**.
Storage of fuel	The BCP facility would have a fuel bunker to store up to three-days of feedstock. In the event of extended BCP shut-down, the PEF Production Plant (operated by SUEZ), would stop sending fuel to the BCP and residuals from the Mill would be temporarily directed to the Chullora PEF plant for storage in containers. SUEZ would implement a stringent preventative and predictive maintenance regime to minimise down time as best as practicable. The operational details of the Project, including planned shutdown schedules, would be confirmed in the EIS.
Proposed fuel	Fuels differ between energy recovery facilities. The EIS would clearly outline the fuel to be used for the Project. The PEF would be sourced from SUEZ's existing waste management network in NSW and pre-treated prior to being converted to PEF. The inputs for the BCP would conform with the intent of the NSW Energy from Waste Policy. A number of international energy recovery plants have been processing the same or similar materials over long periods of operation. SUEZ has referenced the East Berlin facility which uses like-for like waste and would provide data for the Air Quality Impact Assessment (AQIA) (Refer to **7.2**) and Human Health Risk Assessment (Refer to **Section 7.3**). Mill residuals would be reviewed against the requirements of the NSW Waste to Energy Policy, if required the requirements for a NSW Resource Recovery Order and Exemption would be reviewed.
Compliance with waste policy	The fuel proposed for the BCP, including PEF and mill residuals and a detailed assessment against the relevant provisions of the NSW waste policy would be provided in the EIS.
Recycling / Resource Recovery prior to thermal treatment	Increasing recycling rates prior to thermal treatment remains a priority for SUEZ and the BCP would be designed to only process residual material following recovery processes (PEF and mill residuals) which would otherwise be destined for landfill. The BCP would only accept material that complies with the NSW Energy from Waste Policy Statement.
Proximity to local residents	The EIS would consider potential impacts on local residents including Human Health Risks, Traffic Impacts, Odour, Property and Noise. Impacts would be assessed, and mitigation measures identified where required ensuring potential impacts are within acceptable levels.
Emergency Management	The BCP would be designed to meet fire prevention and suppression requirement stipulated in applicable Australian Standards and building codes. An Emergency Response Plan would be developed and implemented during construction and operation of the BCP. These matters would be addressed in the Hazard and Risk Assessment (Refer to **Section 7.8**) prepared as part of the EIS.

5.0 Planning and Assessment Process

5.1 Environmental Planning and Assessment Act 1979

5.1.1 Overview

The NSW EP&A Act is the primary legislation that governs land use and provides a framework for development control in NSW. The EP&A Act is supported by the *Environmental Planning and Assessment Regulation 2000* and a number of Environmental Planning Instruments (EPIs) which include State Environmental Planning Policies (SEPPs) and Local Environment Plans (LEPs).

Part 4 of the EP&A Act establishes a framework for assessing development that requires consent under an EPI. It allows development to be classified as 'exempt development' (where no consent is required), 'complying development', 'development that needs consent', or 'prohibited development'. The term 'development' is defined under section 1.5 of the EP&A Act.

5.1.2 Permissibility

The Project is located on land to which the Three Ports SEPP 2013 applies. The Project is located on land Zoned IN1 General industrial under the Three Ports SEPP and not within the Port Botany lease area as identified in the SEPP. The Project is not identified as a permissible land use under the IN1 zoning of the Three Ports SEPP.

Notwithstanding clause 6(3)(a) of the Three Ports SEPP states that the Policy does not restrict or prohibit the carrying out of any development on land to which the Policy applies that is also permitted to be carried out with or without development consent under *State Environmental Planning Policy (Infrastructure) 2007* (the Infrastructure SEPP).

The Infrastructure SEPP (clause 34 (4)) 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.

The Three Ports SEPP identifies *general industries* and *waste or resource management facilities* to be permissible land uses with consent under the IN1 zoning. As such, in accordance with the provisions of clause 34(4) of the Infrastructure SEPP, the Project (which would comprise *electricity generating works that generate energy from waste*) is considered to be permissible with consent under the Three Ports SEPP IN1 zoning.

5.1.3 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 EPI (such as a SEPP) or by the NSW Minister for Planning. Most developments are declared as state significant if they meet the requirements of *State Environment Planning Policy (State and Regional Development) 2011*.

The Project is classified as SSD pursuant to clause 8 of the SEPP as it is permissible with consent at the site and it meets the requirements of clause 20 of Schedule 1 of the aforementioned EPI in that:

> *The project is for the purpose of the co-generation of electricity and heat using waste as an energy source and has a capital investment value (CIV) of more than $30 million (the estimated CIV for the Project is in the order of $220 million).*

Section 4.12(8) of the EP&A Act states that a "*development application for State significant development is to be accompanied by an environmental impact statement prepared by or on behalf of the applicant in the form prescribed by the regulations."* Schedule 2 of the EP&A Regulation sets out the requirements of an EIS and requires that the content of an EIS is '*subject to the environmental assessment requirements that relate to the EIS'*. The purpose of this document is to request SEARs for the EIS for the Project.

In line with section 4.5 of the EP&A Act, the consent authority for the Project would be the NSW Minister for Planning or the Independent Planning Commission (in the case of greater than 25 objections to the application, local council objection, and/ or reportable political donations). As noted in section 4.40, SSD applications are evaluated and determined in line with the requirements of section 4.15 of the EP&A Act (matters for consideration including relevant EPIs, likely impacts to the built and natural environment and social and economic impacts, submissions made on the application, site suitability and public interest).

Sections 4.41 and 4.42 of the EP&A Act identify authorisations that are not required for a SSD Project, and authorisations that cannot be refused if necessary for carrying out a SSD respectively.

Environmental approvals that do not apply to or in respect of SSD, but which have been considered in the preparation of this Scoping Report are listed in **Table 7**.

Table 7 Relevant Approvals not required under clause 4.42

Approval	Comment
A permit under section 201 of the *Fisheries Management Act 1994*	The Project would not involve dredging or reclamation works.
A permit under section 205 of the *Fisheries Management Act 1994*	No works are proposed in waterways. The Project would not impact on key fish habitat.
A permit under section 219 of the *Fisheries Management Act 1994*	No works are proposed in waterways. The Project would not result in the blockage of fish passage.
An approval under Part 4, or an excavation permit under section 139, of the *Heritage Act 1977*	No non-Indigenous items were identified to occur on the site or surrounding properties according to Randwick LEP 2012 and or the Office of Environment and Heritage (OEH) NSW heritage register. The Project is unlikely to impact non-Indigenous heritage items (Refer to **Section 7.16**).
An Aboriginal heritage impact permit under section 90 of the *National Parks and Wildlife Act 1974*	A search of the OEH Aboriginal Heritage Information Management System (AHIMS) register on 19 May 2019 did not identify any Aboriginal sites or places occurring on the site (Refer to **Section 7.16**). Given the already developed and highly disturbed nature of the Project site and surrounds, there is considered to be low potential for previously unidentified Aboriginal artefacts to occur within the site. Potential impacts to Aboriginal heritage would be assessed in the EIS for the Project.
A bushfire safety authority under section 100B of the *Rural Fires Act 1997*	The site is not located on bushfire prone land.
A water use approval (section 89), a water management work approval (section 90) or an activity approval (other than an aquifer interference approval) (section 91) of the *Water Management Act 2000*	The Project would not involve taking of groundwater during construction works (aquifer interference). During the preparation of the EIS an assessment of potential impacts to surface or groundwater would be undertaken.

Table 8 discusses each of the approvals required under section 4.42 of the EP&A Act and their applicability to the Project.

Table 8 Relevant Approvals required under section 4.42

Approval	Comment
An aquaculture permit under section 144 of the *Fisheries Management Act 1994*	The Project would not involve aquaculture therefore no aquaculture permit would be required.
An approval under section 15 of the *Mine Subsidence Compensation Act 1961*	The Project is not located within a mine subsidence district.
A mining lease under the *Mining Act 1992*	The Project does not require a mining lease and would not be undertaken within a lease area.
A production lease under the *Petroleum (Onshore) Act 1991*	The Project would not involve petroleum production.
An EPL under Chapter 3 of the *Protection of the Environment Operations Act 1997* (for any of the purposes referred to in section 43 of that Act)	The Project would be classified as a scheduled activity under Part 18 of Schedule 1 of the *POEO Act 1997* – as it would involve *energy recovery from general waste* involving the *processing of more than 200 tonnes per year of waste (other than hazardous waste, restricted solid waste, liquid waste or special waste)*. An EPL would therefore be required.
Consent under section 138 of the *Roads Act 1993*	The Project site would be located at 1891 Botany Road, Matraville, within the Randwick City Council LGA. Botany Road at this location is a classified road managed by NSW Roads and Maritime Services. The works may require a new access point to connect the Project to the road network (Botany Road). Consultation would be carried out with NSW Roads and Maritime Services to confirm the requirements of creating a new access via Botany Road for trucks delivering PEF to the Project and approval under the Roads Act would be obtained prior to access construction works.
A licence under the *Pipelines Act 1967*	The Project would not involve installation of pipelines to/ from the site and therefore a license would not be required. Natural gas services required for the project would be via connections from existing services at the Orora Recycled Paper Mill.

5.2 State and Local Policies Pertaining to the Project

The following EPIs include provisions relating to issues that would or may be relevant to the environmental impact assessment of the Project and relevant provisions that would be considered in the EIS.

5.2.1 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) aims to facilitate the effective delivery of infrastructure across the NSW. Given that Botany Road is a classified road which is under the purview of Roads and Maritime Services, construction of a new access to Botany Road would require consultation with Roads and Maritime and the Randwick City Council. The site access options assessment would be considered in the EIS.

5.2.2 State Environmental Planning Policy (State and Regional Development) 2011 (State and Regional Development SEPP).

Under State and Regional Development SEPP, the Project is considered SSD, as the Project is for the purpose of *co-generation of electricity and heat using waste as an energy source and has a capital*

investment value (CIV) of more than $30 million as defined in Clause 20 Schedule 1 of the SEPP. the relevant consent authority is the Minister (or the Independent Planning Commission)

Clause 11 of the SEPP applies to the Project, which makes it clear that the requirements of development control plans do not apply to SSD projects.

5.2.3 State Environmental Planning Policy (Three Ports) 2013 (Three Ports SEPP)

The Three Ports SEPP is the principal environmental planning instrument that establishes the land use planning and assessment framework for appropriate development at Port Botany and the surrounding area. It applies to land leased to private port operators under the Ports Assets (Authorised Transactions Act) 2012 as well as surrounding land used for port related and industrial uses. Its zoning and land use tables guide the form of development within the port zoned areas and aim to prevent incompatible land uses. It provides a number of approval pathways commensurate with the level of impact and criteria to be met for complying and exempt development. All development within the lease areas (except complying and exempt development) and unzoned lands is subject to approval by the Minister for Planning.

As identified in **Section 5.1.3** of this Scoping Report, the Project is located on land Zoned IN1 General industrial under the Three Ports SEPP and not within the Port Botany lease area as identified in the SEPP. The Project is deemed to be permissible within the IN1 zone through a combination of the provisions of clause 6(3)(a) of the Three Ports SEPP and clause 34 (4) of the ISEPP.

5.2.4 State Environmental Planning Policy (Coastal Management) 2016 (Coastal Management SEPP)

The aim of the Coastal Management SEPP is to promote an integrated and co-ordinated approach to land use planning in the coastal zone in a manner consistent with the objects of the *Coastal Management Act 2016,* including the management objectives for each coastal management area.

This SEPP introduces four 'coastal areas', namely Coastal wetland and littoral rainforests area; Coastal vulnerability area; Coastal environment area; and Coastal use area. Developments that are located within one or more of these areas would need to ensure that the consent authority is satisfied that certain considerations have been addressed.

The site is not located within a Coastal wetland or littoral rainforest area. The project is located within 300 m of the Coastal environment area and Coastal use area but it is not located within these zones itself. Some residuals from the site would be disposed offsite to a licenced treatment facility and given that the site is already built up, the new hardstand areas are not anticipated to result in a significant change in volumes of surface flows discharging from the site. Potential spillages entering surface drainage and discharging from the site would be addressed during the EIS, considering requirements related to Coastal environment area and Coastal use area.

5.2.5 State Environmental Planning Policy No 33 – Hazardous and Offensive Development (SEPP 33)

SEPP 33 outlines the approach used in NSW for planning and assessing the risks and hazards associated with industrial development proposals. Through the policy, the permissibility of an industrial proposal is linked to its safety and pollution control performance. SEPP 33 applies to any proposals that fall under the policy's definition of 'potentially hazardous' or 'potentially offensive industry'. The policy states:

> *potentially hazardous industry means a development for the purposes of any industry which, if the development were to operate without employing any measures to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would pose a significant risk in relation to the locality:*
>
> *(a) to human health, life or property, or*
>
> *(b) to the biophysical environment*
>
> *and includes a hazardous industry and a hazardous storage establishment.*
>
> *potentially offensive industry means a development for the purposes of an industry which, if the development were to operate without employing any measures to reduce or minimise its impact in*

the locality or on the existing or likely future development on other land, would emit a polluting discharge (including for example, noise) in a manner which would have a significant adverse impact in the locality or on the existing or likely future development on other land, and includes an offensive industry and an offensive storage establishment.

For development proposals classified as 'potentially hazardous industry' the policy establishes a comprehensive test by way of a preliminary screening assessment and preliminary hazard analysis (PHA) to determine the risk to people, property and the environment. The EIS would include an assessment of potential hazards and risks in accordance with the requirements of SEPP 33 at the Project site and associated with the road transport of restricted residuals (FGTR) offsite. **Section 7.8** of this Scoping Report provides further details regarding the proposed assessment of hazards and risks associated with the Project.

5.2.6 State Environmental Planning Policy No 55 – Remediation of Land (SEPP 55)

The objects of SEPP 55 are to provide a State-wide planning approach for the remediation of contaminated land and to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment.

SEPP 55 restricts consent authorities from issuing development consent on land that may be contaminated, unless the consent authority is satisfied that the land in question is suitable for the development proposed to be carried out, or would be suitable if appropriate remediation is undertaken.

There is the potential for contaminated land to be encountered based on historical land use of the Project site. Building #B8 would be demolished before the site can be leased to SUEZ for development of the Project. Demolition of the #B8 building and associated site preparation works (e.g. contamination assessment and/ or remediation of historic soil contamination) would be undertaken by Orora under a separate approval process to ensure compliance with SEPP 55 and does not form part of this Project. Site remediation would be carried out by Orora to a level suitable for the site's intended future use (i.e. industrial land use) prior to being leased to SUEZ.

The EIS would identify residual contamination risks (based on historic land use) and appropriate mitigation measures for managing and dealing with any residual contaminated material that may be encountered on site during construction works (but which would not preclude the intended land use).

The site is not on the list of NSW contaminated sites and does not appear on the Contaminated Land: Record of Notices. The nearest site listed on the EPA Contaminated Land Register is the 7-11 Service Station Matraville located approximately 700 m to the north east of the site where the contamination was due to petroleum hydrocarbons. It would need to be demonstrated the land (including any residual contamination) is not inconsistent with the proposed use for the construction and operation of the Project.

5.2.7 Randwick Local Environmental Plan 2012

The Project is located within the Randwick LGA, however the provisions of the Randwick LEP2012 (including land zoning and permissibility) do not apply to the Project site as it is located on land to which the Three Ports SEPP applies. Notwithstanding, the aims of Randwick LEP 2012 (section 1.2) would be considered in the EIS to ensure that the Project is developed consistent with the overall objectives of the LEP, to minimise impacts to surrounding sensitive land use and receivers and promote the liveability of the city.

5.3 State and International Policy

5.3.1 NSW Energy from Waste Policy Statement 2015

The NSW Energy from Waste Policy Statement sets out the policy framework and overarching criteria that apply to facilities in NSW proposing to thermally treat waste or waste-derived materials for the recovery of energy and in doing so provides 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. Energy recovery facilities must implement current best practice techniques and ensure that they meet specific technical, thermal efficiency and resource recovery criteria. In addition, a proposed energy recovery facility project must also undertake public consultation and adhere to the good neighbour principle.

The proposed Project would need to comply with the requirements set out in the NSW Energy from Waste Policy Statement.

5.3.2 NSW Protection of the Environmental Operations (Waste) Regulations 2014

The *Protection of the Environment Operations (Waste) Regulation 2014* (the POEO Waste Regulation) sets out provisions covering the way waste is managed in terms of storage, transportation and processing as well as reporting and record keeping requirements for waste facilities.

These regulations enable NSW to issue 'resource recovery orders and exemptions' that allow for the beneficial 'reuse' of wastes via land application or for use as a fuel. These regulations support the principle of 'wastes to resources' where the wastes are fit for beneficial reuse.

Resource recovery orders and exemptions may be required for material processed at the Project and outputs such as bottom ash if land application were to be considered.

5.3.3 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 2021-22 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.

5.3.4 NSW Waste Classification Guidelines

The *Waste Classification Guidelines* (EPA, 2014) provide advice and direction on classifying waste so that appropriate management of all waste types is achieved. Waste classification helps those involved in the generation, treatment and disposal of waste, ensure the environmental and human health risks associated with their waste is appropriately managed in accordance with the POEO Act and its associated regulations. The Waste Classification Guidelines would be relevant to the Project with regard to classification and associated management of various waste streams generated during construction and operation of the facility. In particular during operation of the Project, both the bottom ash, FGTR produced would need to be classified in accordance with the guidelines prior to processing and/or disposal.

5.3.5 European IPPC Bureau IED and BREF

The Industrial Emissions Directive (IED 2010/75/EU) of the EU (adopted on 24 November 2010) is the main EU instrument regulating pollutant emissions from industrial installations. The IED aims to achieve a high level of protection of human health and the environment taken as a whole by reducing harmful industrial emissions across the EU, in particular through better application of best available techniques (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. BREFs for relevant industries inform decision makers about what may be technically and economically available to industry in order to improve environmental performance. In the EU, the key elements of BREFs (i.e.

'BAT conclusions') are typically referenced in setting permit conditions for installations covered by the IED.

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 Draft BREF WI (2018) has also been published by the European IPPC Bureau.

SUEZ has committed to designing the BCP consistent with the latest draft of the BREF for Waste Incineration facilities (2018) under the European IPPC Bureau, IED consistent with international best practice (Refer **Section 7.4**).

5.4 Strategic Planning

5.4.1 Greater Sydney Region Plan: A Metropolis of Three Cities

The Greater Sydney Region Plan – A Metropolis of Three Cities is built on a vision of three cities where most residents live within 30 minutes of their jobs, education and health facilities, services and great places. These cities comprise Western Parkland City, Central River City and Eastern Harbour City, with the Botany area being located in the Eastern Harbour City. The Plan integrates land use, transport and infrastructure planning between the three tiers of government and across State agencies and sets the planning framework for the five districts that make up the region.

The Project is considered to be consistent with the liveable cities vision of the Greater Sydney Plan which supports compatible land use development and sustainability outcomes. The Project is proposed to be developed within an existing disturbed brownfield industrial site which supports ongoing industrial land use. Furthermore, the Project would employ the circular economy model which would provide an innovative environmental solution for residuals generated at Orora Recycled Paper Mill, enhance energy security, divert waste from landfill (and increase the design life of landfills), reduce greenhouse gas (GHG) emissions and provide employment within the district.

5.4.2 Eastern City District Plan

The Greater Sydney Commission's five District Plans are a guide for implementing the Greater Sydney Region Plan at a District level. Of relevance to this Project is the commitment to retaining industrial and urban services land and aligning growth with infrastructure, including transport, social and green infrastructure, and delivering sustainable, smart and adaptable solutions. Port Botany is part of the Eastern Economic Corridor, recognised in the plan as the State's greatest economic asset. District plans inform the preparation and endorsement of local strategic planning statements and the preparation and assessment of planning proposals.

As identified above, the Project is considered to be consistent with the liveable cities vision of the Greater Sydney Plan, which supports compatible land use development and sustainability outcomes, and in turn the Eastern City District Plan. The Project would deliver capital investment and additional employment to the Eastern Economic Corridor (which includes Botany Bay and its surrounds) supporting its ongoing economic development. Furthermore, the Project would be developed within an existing disturbed brownfield industrial site which permits ongoing industrial land use ensuring compatible land use development, and would promote sustainable outcomes by diverting waste streams from landfill and introducing an innovative solution to generating energy.

5.5 Commonwealth Environmental Approvals

5.5.1 Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) requires the approval of the Commonwealth Minister for the Environment and Energy for actions that may have a significant impact on a controlling provision, including Matters of National Environmental Significance (MNES). Approval from the Commonwealth Minister is in addition to any approvals under NSW legislation.

The EPBC Act lists nine MNES that must be addressed when assessing the environmental impacts of a proposal. These matters are:

- World heritage properties

- National heritage places
- Ramsar wetlands of international significance
- Threatened species and ecological communities
- Migratory species
- Nuclear actions (including uranium mining)
- Commonwealth marine areas
- Great Barrier Reef Marine Park
- A water resource, in relation to coal seam gas development and large coal mining development.

The EPBC Act also requires Commonwealth approval for any activity that would, or is likely to have, a significant impact on Commonwealth land. The land on which the Project would be constructed is not Commonwealth land, and there is no Commonwealth land in close proximity to the Project which could be impacted by the construction or operation of the Project.

A search of the EPBC Act Protected Matters Search Tool was undertaken on the 8 June 2019 for a 10 km buffer around the site. The search identified six places of national heritage importance, one wetland of international importance, 11 threatened ecological communities, 79 threatened flora and fauna species and 79 listed migratory species with potential to occur within 10 km of the site.

The results of the Protected Matters search for MNES are provided in **Table 9**. The Protected Matters search can be viewed in **Appendix A**.

Table 9 MNES within 10 kms of the Proposed Site

NES Matter	Matters of NES within 10 km of the site
World Heritage Properties	None
National Heritage Properties	6
Wetlands of International Importance	1
Great Barrier Reef Marine Park	None
Commonwealth Marine Area	None
Listed Threatened Ecological Communities	11
Listed Threatened Species	79
Listed Migratory Species	79
A water resource, in relation to coal seam gas development and large coal mining development.	N/A

The Towra Point Nature Reserve (a RAMSAR wetland of international importance) and the Kurnell wetlands (a Nationally important wetland) are both listed as MNES and are located about 6 km from the Project site across Botany Bay.

It is considered unlikely the Project would impact upon these or any of the identified MNES and the Project is not considered to represent a Controlled Action under the EPBC Act. Several threatened fauna species have been previously recorded in the area and surrounds including the Grey-headed Flying Fox and Swift Parrot. The Project site would be located within the existing Orora Recycling Paper Mill premises where the #B8 building currently sits, within an already disturbed and developed area surrounded by other industrial and urban land use. Therefore, it is considered highly unlikely that threatened species, communities or migratory species would frequent or depend on habitat within the site or would be impacted by the Project. As such it is considered that the Project would not warrant referral to the Commonwealth Department of Environment and Energy. Due diligence assessments would be undertaken as part of the EIS to confirm this.

6.0 Preliminary Environmental Risk Analysis

An initial review of potential issues for consideration in the EIS has been undertaken, with the aim of determining the likely level of assessment required to adequately and appropriately address each issue. In undertaking the initial screening, consideration has been given to the significance of potential environmental impacts for each environmental aspect (through a preliminary environmental risk screening) and also to the likely level of stakeholder interest in each issue. The inclusion of stakeholder perceptions of potential environmental impacts is considered an important part of determining the level of assessment that should be applied, given that key stakeholder concerns may not necessarily align with a purely technical analysis of environmental risks.

By combining the likely significance of each identified environmental issue with the expected level of stakeholder interest, an assessment has been made as to whether each issue is integral to the assessment of the Project, and whether a detailed specialist investigation or desktop analysis would be appropriate. Where a high level of stakeholder interest is expected, potential environmental impacts have been determined to be key issues, requiring a more detailed assessment irrespective of the outcomes of environmental risk screening.

6.1 Environmental Risk Screening Methodology

The environmental risk screening has been prepared in reference to:

- A review of the site potential environmental constraints
- Key risks identified in a review of other like projects including identifying areas of primary community interest.

The preliminary environmental risk screening for the Project has taken into consideration the likelihood of a potential 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 the risk screening matrix (**Table 10**) to establish the likely risk of the issue for the environmental assessment of the Project.

Table 10 Significance 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 allocation of risk is based upon the following considerations:

Likelihood of effect:

1. Unlikely – Unlikely to happen or occur;
2. Possible – Could happen and has occurred elsewhere
3. Likely – Could easily happen and would probably occur.

Consequences of unmitigated impact:

1. Minor: minor adverse environmental change; small impact area; non-reportable incident
2. Moderate: moderate adverse environmental change; moderate impact area; reportable incident
3. Major: major adverse environmental change; large impact area; reportable incident to external agency; may result in fines.

The screening process aims to prioritise the issues for assessment and does not consider the application of mitigation measures to manage potential environmental effects. Appropriate mitigation measures would be included in the Project to minimise potential impacts and would be detailed in the EIS.

6.2 Review of Expected Stakeholder Interest

The expected level of stakeholder interest in each potential environmental issue identified has been considered based on known key issues raised in submissions in relation to other projects of this nature.

Potential environmental impacts have been assigned an expected level of stakeholder interest based on the definitions presented in **Table 11**.

Table 11 Screening Levels – Expected stakeholder interest

Level of Interest	Definition
High level of interest	Identified potential environmental impact is likely to affect or garner interest from large number stakeholders.
Medium level of interest	Identified potential environmental impact is likely to affect or garner interest from some stakeholders.
Low level of interest	Identified potential environmental impact is unlikely to affect or garner interest from stakeholders.

6.3 Screening of Environmental Assessment Significance Outcome

The outcomes of the preliminary screening process are presented in **Table 12**. Mitigation measures would be developed during the assessment process and presented in detail in the EIS.

Table 12 Outcomes of Screening of Environmental Assessment Significance (Unmitigated)

Issue	Unmitigated Environmental Risk Screening			Stakeholder Level of Interest	Environmental Assessment Significance
	Likelihood	Consequence	Risk		
Air Quality					
Construction air quality impacts	Possible	Minor	Low	Low	Low
Stack emissions during facility operation	Likely	Major	Very High	High	Very High
Odour	Possible	Moderate	Medium	Medium	Medium
Health Risk					
Health impacts to the local area due to air emissions	Likely	Major	Very High	High	Very High
Waste Policy					
Compliance with applicable waste policy during design and operation	Likely	Major	Very High	High	Very High
Waste and Resource Use					
Construction Waste generation	Likely	Minor	Medium	Low	Low
Operational Waste (Bottom ash and FGTR) disposal	Likely	Major	Very High	High	Very High
Traffic and Transport					
Construction traffic and transport	Likely	Moderate	High	Medium	Medium
Operational traffic and transport including new access	Likely	Minor	Medium	High	High
Visual					
Changes in visual appearance during construction	Possible	Minor	Low	Low	Low
Changes in visual appearance during operation.	Likely	Moderate	High	High	High
Hazards and Risk					
Potential hazards and risk associated with transportation and disposal of bottom ash and FGTR	Possible	Moderate	Moderate	Medium	Medium
Potential fire hazard and risk	Possible	Major	High	Medium	High
Chemical storage hazards associated with the operation of the Project	Possible	Moderate	Moderate	medium	Medium

Issue	Unmitigated Environmental Risk Screening			Stakeholder Level of Interest	Environmental Assessment Significance
	Likelihood	Consequence	Risk		
Social and Economic					
Amenity impacts during construction and operation	Likely	Moderate	High	Medium	High
Property and land use impacts	Unlikely	Moderate	Low	Medium	Medium
Creation of employment opportunities	Likely	Minor	Medium	Low	Low
Noise and Vibration					
Construction noise and vibration impact	Likely	Minor	Medium	Medium	Medium
Operational noise and vibration impact	Likely	Minor	Medium	Medium	Medium
Soils and Water					
Interaction with legacy soils and groundwater contamination	Possible	Moderate	Medium	Low	Medium
Potential to encounter groundwater during construction	Possible	Minor	Low	Low	Low
Water use and requirements during site construction	Likely	Minor	Medium	Low	Low
Potential new contamination of soils and groundwater during construction	Possible	Minor	Low	Moderate	Medium
Increased sedimentation and erosion during construction	Possible	Minor	Low	Medium	Medium
Potential to encounter Acid Sulphate Soils during construction	Unlikely	Moderate	Low	Low	Low
Site flooding risk	Unlikely	Moderate	Low	Low	Low
Water use during operation	Possible	Minor	Low	Low	Low
Stormwater and wastewater management during operation	Possible	Minor	Low	Low	Low
Aircraft safety					
Stack height and plume impacting aircraft safety	Possible	Major	High	Medium	Medium
Greenhouse Gas (GHG) Emissions					
GHG emissions	Likely	Minor	Medium	Medium	Medium
Excessive energy requirements	Unlikely	Minor	Low	Low	Low

Issue	Unmitigated Environmental Risk Screening			Stakeholder Level of Interest	Environmental Assessment Significance
	Likelihood	Consequence	Risk		
Sustainability					
Sustainable construction measures	Possible	Moderate	Medium	Medium	Medium
Sustainable operational design	Likely	Moderate	High	Medium	High
Cumulative Impacts					
Contribution to construction cumulative impacts	Possible	Moderate	Medium	Medium	Medium
Contribution to operational cumulative impacts	Possible	Moderate	Medium	Medium	Medium
Aboriginal and 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
Flora and Fauna					
Construction or operational impact to biodiversity including in Botany Bay	Unlikely	Minor	Very Low	Low	Low
Potential impacts to threatened flora or fauna that the site may support	Unlikely	Minor	very Low	Low	Low

6.4 Identification of Key Environmental Assessment Issues

Based on the risk screening presented in **Table 12**, key aspects requiring assessment for this SSD application have been identified and are summarised in **Table 13**. Issues presenting a lower risk level which would also be considered in the EIS (other issues) are also identified in **Table 13**. Key and other issues are discussed in further detail in **Section 7.0**.

For each of the aspects considered in **Table 13**, an assessment of significance was made based on the dominant significance ranking. This risk screening assessment was based on the information currently available and the desktop investigations undertaken to date.

These environmental assessment significance rankings would be reviewed and updated as more detailed environmental investigations are undertaken to inform the preparation of the EIS for the Project. In addition where additional relevant issues or aspects are identified during the preparation of the EIS including through stakeholder consultation, these would be subject to risk screening and assessment in the EIS commensurate with the level of risk and sensitivity identified.

Table 13 Identification of Key and Other Assessment Issues

Environmental Aspect	Environmental Assessment Significance	Summary of Matters for Consideration
Air quality	Very High	• Construction air quality impacts • Stack emissions during operation with consideration to background ambient conditions • Odour
Health risk	Very High	• Health impacts to the local area due to air emissions
Waste policy	Very High	• Compliance with applicable waste policy during design and operation
Waste management	Very High	• Construction Waste generation • Operational Waste (Bottom ash and FGTR) disposal
Traffic and transport	High	• Construction traffic and transport • Operational traffic and transport
Visual impacts	High	• Changes in visual appearance during construction • Changes in visual appearance during operation
Hazard and risk	High	• Potential hazards and risk associated with transportation and disposal of bottom ash and FGTR • Potential fire hazard and risk • Chemical storage hazards associated with the operation of the Project
Socio-economic	High	• Creation of employment opportunities • Amenity impacts during construction and operation • Property and land use impacts
Noise and vibration	Medium	• Construction noise and vibration impact • Operational noise and vibration impact

Environmental Aspect	Environmental Assessment Significance	Summary of Matters for Consideration
Soil and water	Medium	• Interaction with legacy soils and groundwater contamination • Potential to encounter groundwater • Water use requirements during site construction • Potential new contamination of soils and groundwater during construction • Increased erosion and sedimentation during construction • Potential to encounter Acid Sulphate Soils during construction • Site flooding risk • Water use during operation • Stormwater and wastewater management during operation
Aircraft safety	Medium	• Stack height and plume impacting aircraft safety
GHG emissions	Medium	• GHG emissions • Excessive energy requirements
Sustainability	Medium	• Sustainability measures during construction • Sustainable operational design
Cumulative impact	Medium	• Contribution to cumulative impacts during construction • Contribution to cumulative impacts during operation
Aboriginal and Non Aboriginal Heritage	Low	• Construction or operational impacts to Aboriginal heritage • Construction or operational impacts to Non-Aboriginal heritage
Flora and fauna	Low	• Construction or operational impact to biodiversity including within Botany Bay • Potential impacts to threatened flora or fauna that the site may support

7.0 Key and Other Environmental Issues

7.1 Environmental aspect identification

Following a review of the Project and the location and sensitivities of the site and surrounding area a number of potential impacts relating to the following environmental aspects were identified. These issues would be further confirmed as part of EIS preparation including consideration of any additional issues or aspects identified during detailed EIS investigations and stakeholder and community consultation. The environmental aspects (Key issues and Other issues) identified for further consideration include:

Key issues

- Air Quality
- Health risk
- Waste policy
- Waste management
- Traffic and transport
- Visual impacts / architectural design
- Hazard and risk
- Socio-economic issues
- Noise and vibration
- Soils and water
- Aircraft Safety
- Greenhouse gas
- Sustainability
- Cumulative impacts.

Other issues

- Aboriginal and non-Aboriginal Cultural Heritage
- Flora and fauna.

For each of the above environmental aspects, a review of the existing environment, the potential for impacts (issues for consideration) and proposed EIS assessment scope has been identified. The EIS assessment scope has been informed by:

- Identified sensitivities of the site and existing receptors and environment
- Level of community and stakeholder concern
- Likely scale and nature of potential Project impacts
- Regulatory discussions and expectations for projects of this nature
- Accepted regulatory standards and environmental impact assessment guidelines in NSW
- Applicable policy and legislation.

Each aspect is described in the sections below.

7.2 Air Quality

7.2.1 Existing Environment

The Orora Recycled Paper Mill site sits at an elevation of approximately 10-15 m above sea level (Katestone, 2019), approximately 600 m from Botany Bay within the Sydney coastal air shed.

Key land-uses surrounding the site include Sydney Airport approximately 3.5 km northwest and Port Botany directly west of the site. Land to the east of the site is predominantly residential whilst a number of industrial activities are concentrated towards the northwest along with some residential premises (Katestone, 2019).

A review of National Pollution Inventory of air emission sources within a 5 km radius of the Project site for the 2016-17 reporting year undertaken by Katestone (2019), identified the main industrial activities that contributed to local air quality comprised: manufacturing, storage, wastewater treatment, stevedoring and transportation services. The facility with the most significant emissions of Nitrogen oxides (NOx) in the vicinity is the Qenos manufacturing facilities located approximately 1.2 km north of the Project site (Katestone, 2019).

NSW OEH operates a number of air quality monitoring stations around Sydney. The closest NSW OEH air quality monitoring station to the Project site is located in Randwick approximately 3.7 km northeast which monitors concentrations of nitrogen dioxide (NO_2), sulfur dioxide (SO_2), ozone (O_3) and suspended particulate matter that is greater than 10 microns in size (PM_{10}). Data from this station was analysed by Katestone (2019) along with ambient ground level concentrations of carbon monoxide (CO) and fine particles less than 2.5 microns in size ($PM_{2.5}$) available from the NSW OEH monitoring station at Rozelle (>10 km away). The maximum measurement for each air pollutant and averaging period from 2015 to 2018 are summarised in **Table 14** and **Table 15**.

Katestone (2019) identified that ambient ground level concentrations of NO_2, CO and SO_2 (2015-2018) were all below NSW impact assessment criteria. For PM_{10} and $PM_{2.5}$ the annual average concentrations were within assessment criteria however daily average concentrations exceeded the assessment criteria for up to five days per year at most (Katestone, 2019). Overall, the ambient air quality in the vicinity of the Project area is within acceptable limits with occasional exceedances.

Table 14 Ambient concentration of NO_2, SO_2 and O_3 measured at Randwick (µg/m^3)

Year	NO_2		SO_2		O_3	
	Maximum 1 hour average	Annual average	Maximum 1 hour average	24 hour average	Annual average	Maximum 1 hour average
2015	88.2	17.3	88.7	11.4	2.4	241.8
2016	90.2	16.4	97.2	8.6	2.4	211.9
2017	84.1	13.9	82.9	22.9	2.9	248.2
2018	82	13.5	60.1	11.4	2.9	156.2
Criteria	**246**	**62**	**570**	**228**	**60**	**214**

Source: Katestone (2019)

Table 15 Ambient concentrations of CO and $PM_{2.5}$ measured at Rozelle, and PM_{10} measured at Randwick (µg/m³)

Year	CO		PM_{10}			$PM_{2.5}$		
	Maximum 1 hour average	Maximum 8 hour average	24 hour average	No of days > 50µg/m³	Annual average	24 hour average	No of days > 25µg/m³	Annual average
2015	2000	1232	77.4	1	18.6	33.4	1	7.2
2016	2125	1339	44.1	0	18	49.4	5	7.4
2017	1500	1063	56	1	19.2	36.3	2	7.2
2018	1250	656	95.5	5	21.2	19.2	0	7.3
Criteria	**30000**	**10000**	**50**	**-**	**25**	**25**	**-**	**8**

Source: Katestone (2019)

7.2.2 Issues for Consideration

Construction

Construction air quality impacts are primarily related to dust generation and exhaust emissions from construction vehicles, machinery and equipment. Almost the entire site is currently sealed. The disturbance area would be largely limited to the proposed building footprint after demolition of the #B8 building and proposed internal road alignment. While construction includes piling as part of foundation works and structural construction, these areas would only be exposed for a short period with dust generation expected to be minimal.

Operation

Sources of emissions to air from the operation of the Project may include:

- Combustion gases and particulates from the vent stack (from the firing of PEF and mill residuals feedstock)
- Odour from PEF and mill residuals unloading, the fuel bunker, effluents, bottom ash pit and the overall BCP
- Exhaust emissions from trucks transporting fuel to and waste from the BCP.

Potential stack emissions from the BCP are identified as a key community concern. Likely pollutants that could make up stack emissions include: Total particulate matter (TPM), SO_2, NOx, Hydrogen chloride (HCl), CO, Total Organic Carbons (TOCs), Hydrogen fluoride (HF), Ammonia (NH_3), Volatile Organic Compounds (VOC), Heavy metals, Dioxins and Furans. Stack emissions data from the reference plant in East Berlin, Germany with like for like fuel, of similar size and capacity would be used to inform the air quality assessment.

SUEZ has a proven track record operating energy recovery plants overseas located across a variety of land uses including populated areas and many of the overseas plants are of a larger capacity and process a wider range of materials than the ERP project. This BCP is designed to accept processed fuel only. The BCP would only accept fuel from the Mill and the PEF plant that have been pre-certified to meet the BCP fuel specification, in order to provide a high level of certainty regarding combustion materials and emissions. In particular there would be no putrescible waste or hazardous chemicals in the proposed fuel types.

In addition, SUEZ has extensive experience operating its energy recovery plants to meet current IED and BREF standards and the operating practices and protocols currently employed at its European plants would be implemented at the BCP. Consistent with best international practice, the BCP would be designed to meet upper emission limits under the revised (draft) BREF which are more conservative than NSW EPA Group 6 limits (refer **Figure 14**).

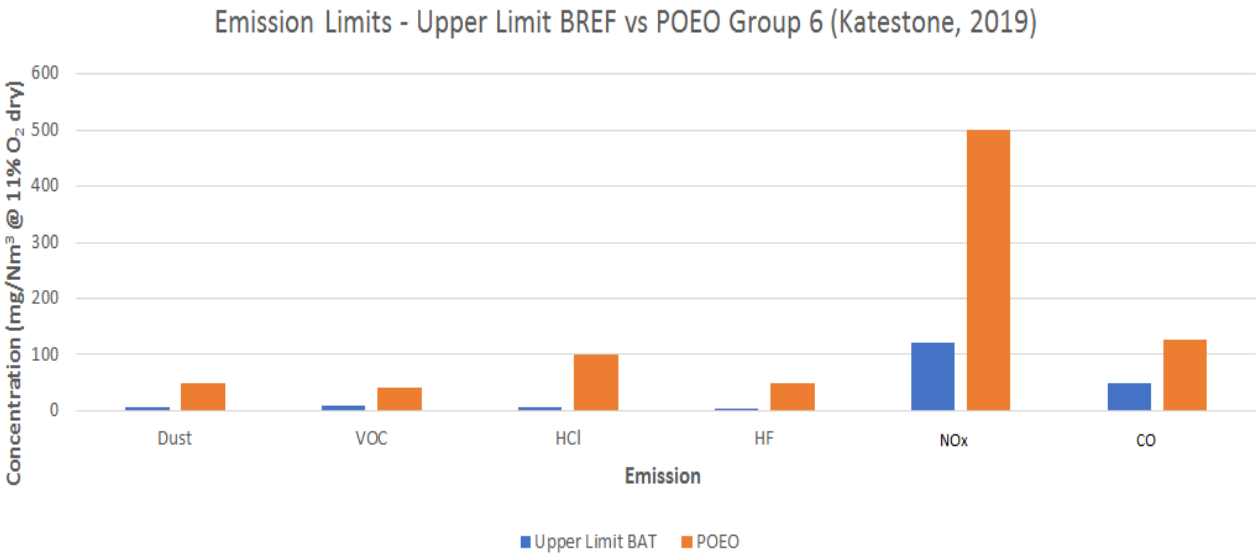


Figure 14 Emission Limit Comparison – Upper Limit BREF 2018 vs POEO Group 6 Emissions

The proposed fuel source (PEF and mill residuals) would not include any putrescible waste material and the fuel receival hall would be designed to operate under negative pressure to minimise the potential for odour generation. Notwithstanding there is the potential for odour to be generated from the fuel receival hall, PEF transfer activities, effluent streams, the bottom ash pit and the overall plant if housekeeping measures are not maintained.

During operation vehicle emissions would be generated from trucks delivering PEF and mill residuals to the enclosed receiving hall, chemicals to the BCP and transporting bottom ash and FGTR offsite.

7.2.3 Proposed EIS Assessment Methodology

Air quality performance data from the like-for-like reference plant in Germany 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 would 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 (combustion gases, dust and odour) from all activities (fugitive and point sources) associated with the Project during operation would be estimated. Point source emissions would be based on the upper emission limits from *Best Available Techniques (BAT) Reference Document for Waste Incineration 2018* (BREFT WI) and information provided from the reference plant. Fugitive source emissions would be based on relevant emission factors from the relevant National Pollution Inventory emission estimation handbooks and information provided by SUEZ. Odour emissions would be estimated from literature.

The EIS would 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 would 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/or monitoring strategies would be recommended to reduce potential air

quality impacts and facilitate achieving consistent compliance with relevant air quality standards at sensitive receptors.

Trucks transporting PEF to the site could also add to pollutant loads in the local airshed. However, trucks would be required to meet relevant emissions standards and as such emissions from transport are not expected to be significant.

The AQIA would be conducted in close consultation with the Human Health Risk Assessor and would form a key input for the Human Health Risk Assessment.

7.3 Health Risk

7.3.1 Existing Environment

The nearest residential receptor is located approximately 130 m to the east of the Project site. The approved Candella Project is the closest industrial/commercial/ retail receptor, located approximately 50 m to the east of the Project site in the suburb of Matraville. Residential receptors as well as future occupiers/ patrons/ workers at the Candella Project once developed would comprise the nearest sensitive receptors to the BCP which would be operated on a continuous basis.

The Orora Recycled Paper Mill has been operating at the site for more than 115 years (under different ownership). Other industrial land uses operating in the area include: manufacturing, storage, wastewater treatment, stevedoring and transportation services.

7.3.2 Issues for Consideration

Air and odour emissions from the BCP could pose health risk to surrounding sensitive receivers if the plant is not designed and operated appropriately. Early consultation activities have identified community concern regarding air quality risks and impacts.

As identified previously, the BCP would be designed to meet the upper limit criteria of the latest BREF WI IED standards for relevant air pollutants (i.e. more conservative standards than current applicable NSW EPA (Group 6) emission criteria) in order to minimise air pollutant risks to the surrounding community consistent with international best practice. Furthermore, SUEZ would utilise its extensive experience operating energy recovery plants overseas to implement similar operating practices and control measures to manage emissions proactively to meet approved air emission limits.

7.3.3 Proposed EIS Assessment Methodology

A Human Health Risk Assessment Technical Report would be prepared for the EIS in accordance to national guidance documents for human health risk assessment including enHealth (2012a&b) and *Schedules B4/B7 Assessment of Site Contamination NEPM* (for standard defaults). The HHRA methodology would include conducting a review of existing health statistics for the study area, evaluating the detailed AQIA findings (Refer to **Section 7.2**) 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 would provide a review of best practice mitigation measures on potential emissions and related risks.

The HHRA would be based on inputs from the AQIA, and input data from the nominated reference plant in Berlin which has been demonstrated to consistently conform to specified European Union IED emission limits and would be used to inform the AQIA. A HHRA would be conducted based on the AQIA findings for the ‘worst case scenario’ (i.e. using maximum emissions data during the BCP operating at maximum capacity and with calm meteorological conditions). The EIS would demonstrate how human health risks can be managed by the design of operations, controls and management measures based on measures currently successfully employed overseas in facilities (e.g. the Suffolk energy recovery plant) located at a comparable distances from receivers.

Community consultation would be carried out to communicate the findings in a transparent and effective manner early in the EIS process.

7.4 Waste Policy

7.4.1 Existing Environment

The Orora Recycled Paper Mill manufactures 100% recycled brown paper from waste corrugated cardboard. Orora is one of Australia's largest cardboard recyclers. A waste management programme in accordance with the waste hierarchy is implemented at the Orora Recycled Paper Mill. There are currently no technically feasible or economically viable options for the further recovery or recycling of mill residuals. Approximately 32,400 tpa of mill residuals are currently disposed to landfill.

SUEZ operates the largest waste management network in NSW and has a reliable source of suitable waste streams for production of PEF to supply the BCP.

7.4.2 Issues for Consideration

In NSW waste management and minimisation is governed by a range of legislation and policies including:

- 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.

Section 5.3 outlines how these policies apply to the Project.

The Project provides the opportunity for beneficial reuse through thermal treatment of residual waste (which cannot be further recycled or recovered) thereby diverting these waste streams from landfill consistent with the WARR Strategy. The Project would 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.

In addition, SUEZ has committed to designing the BCP consistent with the latest draft of the BREF for Waste Incineration (WI) facilities under the European IPPC Bureau IED consistent with international best practice. SUEZ' existing European fleet of energy recovery plants are being operated to meet EU IED requirements and the Project would be similarly designed and operated to achieve the requirements of the latest draft of the EU BREF WI including upper limit emission standards which are more conservative than current applicable NSW EPA (Group 6) emission criteria.

7.4.3 Proposed EIS Assessment Methodology

The EIS would include supporting information either as a stand-alone assessment chapter or as part of the Project description and statutory assessment sections of the EIS which demonstrates the conformance of the Project to applicable waste policy as identified above. The EIS would include the following:

- Assessment of the proposed fuel including waste characterisation and confirmation of waste composition and quantities to be used in the BCP. Furthermore, based on the expected composition and classification of the bottom ash and FGTR environmentally appropriate management and disposal or reuse options would be outlined.
- Assessment of the Project (including fuel, resource recovery, thermal efficiency and technical energy recovery plant criteria) against the NSW Energy from Waste Policy Statement (2015) and the European IPPC Bureau, IED BREF for Waste Incineration facilities (latest draft)
- Operating and quality control procedures that would be implemented to ensure fuel quality is maintained and calorific requirements for thermal efficiency and Mill requirements are met.
- Demonstration that the fuel used in the BCP (PEF and mill residuals) would be the residual from a resource recovery process that maximises the recovery of material in accordance with the NSW Energy from Waste Policy Statement (2015) and consistent with the *NSW Waste Avoidance and Resource Recovery Strategy.*

7.5 Waste Management

7.5.1 Existing Environment

Operational waste generated by the Orora Recycled Paper Mill (including mill residuals, other mill rejects and waste water) is managed in accordance with its existing approval requirements and in accordance with the waste hierarchy.

SUEZ operates the largest waste management network in NSW, which includes the SUEZ Elizabeth Drive Kemps Creek facility; the only facility in NSW licenced to accept restricted waste.

7.5.2 Issues for Consideration

Construction

As with all construction projects, various types and quantities of construction waste would be generated during construction. Where possible the key structural components would be prefabricated offsite to minimise generation of off cuts and waste materials on site. Typical construction wastes that would be generated would range from packaging material such as wooden crates, metal offcuts and various plastics, excavation spoil and general rubbish from construction personnel. The Project is not anticipated to generate significant quantities of construction waste and given that SUEZ in an experienced waste management and disposal specialist, waste would be appropriately classified and disposed of in licensed SUEZ facilities in accordance with NSW waste classification guidelines and waste hierarchy principles.

Operation

The following waste streams and emissions would be generated by the BCP once operational:

- Bottom ash
- FGTR
- Stormwater run-off
- Sewerage
- Effluent from boiler process water tank and extinguishing water from fuel pit
- Stack emissions (Refer in Air Quality - **Section 7.2**).

Under the existing regulatory framework, it is anticipated that FGTR would be classified as restricted waste due to the use of PEF as fuel (this classification would be subject to confirmation) and be disposed of at SUEZ' existing restricted waste facility at Elizabeth Drive, Kemps Creek. Options for the reuse of bottom ash (such as for road construction as currently occurs in Europe) would be explored or the material disposed of at the SUEZ Elizabeth Drive, Kemps Creek facility.

7.5.3 Proposed EIS Assessment Methodology

The EIS would include a stand-alone waste chapter which assesses the construction and operational waste streams generated by the Project and how they would be appropriately minimised, managed, classified and disposed of in accordance with NSW waste classification guidelines and waste hierarchy principles. The waste chapter would assess the re-use and/ or disposal options for bottom ash and FGTR generated by the BCP.

An operational water balance would be included as part of the EIS (soil and water chapter) which identifies water inputs and wastewater streams and how these would be managed and disposed.

The waste assessment would involve:

- Reviewing Project information and identifying the types, quantities and quality of waste (solid, liquid and gaseous) that would generated during construction and operation
- Classification of all major waste streams in accordance with the *Waste Classification Guidelines* (EPA 2012), using fuel data and bottom ash and FGTR data from the reference plant
- Describing potential impacts to the environment from the waste streams generated during construction and operation

- Recommending management measures for identified waste streams, including bottom ash and FGTR from point of generation to final disposal covering handling, segregation, storage, transportation and disposal (including current and future offsite waste disposal options)
- Assessment of the suitability of bottom ash for reuse in land application, demonstrating that it is fit-for-purpose and poses minimal risk of harm to the environment to support an EPA resource recovery exemption under Clause 51A of the *Protection of the Environment Operations (Waste) Regulation 2014*
- Identifying of how waste would be reduced, reused, recycled or disposed of in accordance with the waste hierarchy and NSW WARR Strategy.

7.6 Traffic and transport

7.6.1 Existing Environment

The Project site is located along Botany Road with ready access via the main access to Orora Recycled Paper Mill. Botany Road is a classified road approved for 25/26 B-double vehicles which is managed by Roads and Maritime Services. The signalised traffic intersection at the Orora Recycled Paper Mill main entrance with Botany Road and Bumborah Point Road, controls traffic flow into and out of the main entrance of the Orora Recycled Paper Mill. Traffic on Botany Road includes hauliers involved in Port Botany Operations and surrounding industrial facilities as well as Transport for NSW (TfNSW) busses travelling to and from the Port Botany Bus Terminal.

There is a pedestrian footpath from Botany Road-McCauley Street to Bunnerong Road which runs along the southern boundary of the Orora Recycled Paper Mill premises and extends along the southern boundary of the Project site.

The local area is serviced by TfNSW bus service No 309X (Port Botany to Central Railway Square express service) which runs along Botany Road and Bumborah Point Road. The nearest bus stop to the Orora Recycled Paper Mill entrance is at Bumborah Point Road (off Botany Road) approximately 135 m from the Mill main entrance. The TfNSW Port Botany Bus Terminal is located along Bumborah Point Road approximately 390 m from the Orora Recycled Paper Mill main entrance. Buses travelling to and from the depot would travel through the intersection that provides access to the Orora Recycled Paper Mill.

The approved Candella Project includes upgrading a slip road from Botany Road that would run along the eastern boundary of the Project site and terminate at a cul-de-sac within the Candella Project site (refer **Figure 5**). This proposed road upgrade does not provide access to the Project site and would not be used during construction or operation of the Project.

Under current operational capacity (425,000 tpa) the Orora Recycled Paper Mill has the capacity to generate traffic volumes of 636 vehicle trips (in and out) per day (336 heavy vehicle trips and 300 light vehicle trips) (ansongroup, 2019). Traffic counts undertaken at the site on 11 December 2018 indicates that the site is operating below approved capacity with traffic generation at approximately 598 vehicle trips per day. Vehicles movements around the site are in one direction only.

7.6.2 Issues for Consideration

The Project is estimated to generate 154 daily trips (54 heavy vehicle trips and 100 light vehicle trips) (ansongroup, 2019). This would be confirmed as part of the EIS following design refinement including confirmation regarding the conveyer option to transport mill residue to the BCP instead of by truck. The traffic increase due to the Project may in combination with traffic generated at the Orora Recycled Paper Mill when operating at peak capacity, impact the level of service at the Botany Road/ Bumborah Point Road intersection as well as traffic safety within the Mill premises.

Construction

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

- Temporary increase in traffic volume due to trucks transporting construction machinery, and raw materials to site and construction waste for offsite disposal as well as light vehicle generation from construction workers

- Movement of heavy loads and over size load transport to the site and potential offsite lay down area within the Port Botany area
- Traffic generation and traffic disruptions during the construction of new access arrangements Currently two options are under consideration and the preferred option would be identified in the EIS:
  - Access through the existing Orora Recycled Paper Mill main entrance via the Botany Road/ Bumborah Point Road intersection, or
  - Creating a new dedicated slip road access from Botany Road to the Project site located 140 m east from the Botany Road/ Bumborah Point Road intersection (refer **Figure 11**).

Operation

Matters to be considered during the operation phase would include:

- Identification of operational traffic requirements for the project with consideration to:
  - The delivery of PEF from the SUEZ Chullora facility to the BCP
  - Trucks delivering mill residuals to the BCP should the conveyor option not be progressed or be delayed
  - Transport of mill residuals directly to the PEF facility for stockpiling and pre-processing during BCP shut downs
  - Additional chemical deliveries to the site
  - Off-site transport of bottom ash and FGTR to the SUEZ waste facility at Elizabeth Drive Kemps Creek
  - Offsite heavy vehicle trips saved by mill residuals being transferred to the BCP and diverted from landfill
- Assessment of the route for the transportation of PEF from the proposed SUEZ PEF facility at Muir Street in Chullora to the BCP and the route for bottom ash and FGTR disposal to the SUEZ restricted waste facility at Elizabeth Drive Kemps Creek. Transport routes that consider dangerous goods restrictions, and RMS roads in preference to local roads would be investigated
- Assessment of operational traffic volumes with consideration to peak traffic generated by the Mill operations including impacts on the level of service of the Botany Road/ Bumborah Point Road intersection and demonstration that the access arrangement option identified provides adequate level of service
- Impacts to internal traffic flow patterns considering current truck traffic to Orora Recycled Paper Mill to minimise conflicts and risks. This would include consideration of trucks delivering mill residuals from the Mill to the BCP should the conveyor option not be progressed or be delayed
- The traffic and transport assessment in the EIS would also consider trucks currently delivering mill residuals to landfill that would be diverted to the BCP and would no longer be using public roads
- The traffic and transport assessment would also consider optimal haulage periods with consideration to minimising impacts on port operations, peak hour impacts and consistency with the Three Ports SEPP (in terms of heavy vehicle haulage).

7.6.3 Proposed EIS Assessment Methodology

A Traffic and Transport Impact Assessment would be prepared for the EIS in accordance with the RMS *Guide to Traffic Generating Developments* (RTA, 2002). This assessment would include the following tasks:

- Assessment of the existing roads, traffic and the main Orora Recycled Paper Mill site access conditions along Botany Road, and a general review of the existing road network
- Review of previous traffic impact assessments and traffic counts undertaken for the surrounding area

- Identification of traffic safety issues on the existing road network
- Review of transportation route options from the proposed SUEZ PEF Production Plant at Muir Street, Chullora to the Project site and of bottom ash and FGTR disposal to the SUEZ Elizabeth Drive Kemps Creek facility with consideration to optimal haulage routes and haulage periods taking into account port operations and Three Port SEPP requirements
- Preparation of a preliminary concept sketch design of the preferred access option, including consideration of emergency vehicle access requirements
- Consultation with RMS and Randwick City Council to discuss the preferred access option
- Assessment of potential impacts to road traffic and the outcomes of consultation with RMS and local councils
- Assessment of plant access options, proposed layout, internal road network and parking in accordance to relevant Australian Standards to provide the most suitable traffic flow pattern considering site constraints and ongoing operation of Orora Recycled Paper Mill
- Assessment of heavy and light vehicle generation as a result of the Project during construction and operations including SIDRA analysis of intersection performance of the Project site access
- Assessment of need for mitigation measures for potential traffic impacts
- Identification of impacts of the Project in relation to road and intersection capacity, access arrangements, traffic safety, public transport routes and affected pedestrian walkway(s). The Traffic and Transport Impact Assessment would include consideration of operational traffic generation at the Orora Recycled Paper Mill, potential interactions with the Candella Project and traffic impacts at any proposed off-site lay down areas.

7.7 Visual Impacts

7.7.1 Existing Environment

The Project would be constructed within the Orora Recycled Paper Mill premises, which has been operating for the past 115 years. The existing Mill has two 33 m AHD high stacks for the gas boilers and is located in an industrial land use area adjacent to Port Botany.

Areas to south of the Mill consist of industrial and port operations and include logistics hubs, warehousing, container yards and a bus depot. Views to the Orora Recycled Paper Mill exist from Botany Road which abuts the southern boundary of the site.

The key sensitive residential receivers are located to the north and east of the site with the nearest residential premise located approximately 130 m to the east. The land on which the Project would be developed is visible from the approved three-storey Candella Project to be located to the east. Development options for the subdivision proposed at the time of preparation of the Scoping Report included lots for three-storey warehouses/ commercial/ retail development subject to market demand. Whilst the Candella Project would be a new sensitive receptor, when completed it would also to some extent block the views of the Project from residential areas to the north east.

7.7.2 Issues for Consideration

Construction

Excavation works and the presence of vehicles and plant including cranes and piling rigs during construction may result in short-term temporary visual impacts for residential receivers to the east and north of the site as well as users of Botany Road. The residents to the north and east of the Orora Recycled Paper Mill and vehicles travelling along Botany Road would have views to the site. Impacts to receivers would be comparable to visual impacts from the recent demolition of the B7 Reel Store Building and ongoing development of the warehouse and hardstand area within the Orora Recycled Paper Mill site. Similarly Building #B8 would need to be demolished prior to construction of the BCP (an activity which is not part of this Project).

The mitigation measures to be implemented during demolition of Building #B8, such as the use of a noise barrier along the eastern property boundary, could be retained during the construction phase of the Project to shield residential receptors from visual impacts and other construction amenity impacts and this would be confirmed as part of the EIS.

Operation

Key changes to the site would include construction of the new approximately 30 m to 45 m high BCP building with a 60 m high stack. Both the building and stack would be visible from vantage points at residential receivers to the east and north as well as from Botany Road. Depending on the design and timing of construction of the Candella Project adjacent to the site, the Project would be visible from the development particularly the upper levels.

The Project would provide an opportunity to enhance the visual characteristics of the Orora Recycled Paper Mill site and the surrounding area by employing the latest contemporary architectural design that has proved to be effective in other energy recovery plants developed by SUEZ internationally. Of particular interest relevance is the award winning design strategy employed at the Suffolk reference plant which is located approximately 160 m from the nearest residence (refer **Figure 10**). SUEZ has extensive international experience in designing energy recovery plants which take into account surrounding landscape and land use setting to minimise intrusive effects on surrounding receptors, have served to enhance the visual landscape character in the vicinity of the facility and have been accepted by the local community. The Project provides an opportunity to enhance the visual landscape of the Orora Recycled Paper Mill site and surroundings through contemporary and sympathetic architectural design with consideration to feedback from the local community and stakeholders. Should a permanent noise barrier be retained along the eastern boundary of the site, it would be subject to appropriate urban design consistent with the facility building.

7.7.3 Proposed EIS Assessment Methodology

A Landscape Character and Visual Impact Assessment Technical Report would be prepared for the Project in accordance with the *Guidelines for Landscape and Visual Impact Assessment* (2013). This would include identification of existing landscape character zones and sensitive visual receivers, and identification of measures to be used to minimise potential visual impacts. The assessment would also include ‘artists impressions’ as well as photomontages of the Project from nominated viewpoints. Two possible locations for photomontages would be from Moorina Avenue (i.e. residential area adjacent to the Orora Recycled Paper Mill and from Botany Road). Consideration would also be given to viewpoint assessment form the adjacent approved Candella Project.

The assessment would address the visibility of the Project and the ability of the existing industrial landscape to absorb visual impact of the Project. The assessment would identify the design principles of the Project site including indicative architectural and urban designs for the building facades and how community input has been taken into account in the design.

7.8 Hazards and risk

7.8.1 Existing Environment

The Orora Recycled Paper Mill yards are stocked with waste cardboard material and the finished goods warehouses contain recycled brown paper, which are both combustible materials. Emergency and incident management procedures and measures are currently implemented on site to manage the risk of fire (and other emergencies) and protect life and property.

7.8.2 Issues for Consideration

State Environmental Planning Policy No 33—Hazardous and Offensive Development (SEPP 33) applies to any proposals which fall under the policy’s definition of ‘potentially hazardous industry’ or ‘potentially offensive industry’. The Project would involve the handling, storing or processing of a range of substances (such as BCP chemicals and FGTR) 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.

Based on the data from the reference plant, the FGTR generated from the BCP is expected to be classified as restricted waste under the *Waste Classification Guidelines* (EPA 2014). The estimated 5.5 tonnes per annum generated would be transported off site and disposed at the SUEZ waste facility at Elizabeth Drive, Kemps Creek which is licensed to accept restricted waste. Management of FGTR would need to be in compliance with the requirements specified in the *Protection of the Environmental Operations Act 1997* Act from the point of generation to final disposal.

An initial review indicated that the bulk chemicals (reagents or other chemical feedstocks) and FGTR are not listed as a 'Dangerous Good' as defined under the *Australian Code for the Transport of Dangerous Goods by Road and Rail* (ADG Code). This would be further investigated during the EIS. The potential for the Project to be hazardous or offensive in the absence of appropriate management and mitigation measures would need to be assessed.

Fire hazards at the Orora Recycled Paper Mill could potentially pose a risk to the Project and similarly feedstock storage at the BCP fuel bunker (up to a three-day stock supply) could pose a fire risk to the Mill. The nature of operations at the BCP means that it would 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 at other SUEZ energy recovery plants.

7.8.3 Proposed EIS Assessment Methodology

To determine whether a PHA is required a Preliminary Risk Screening would be completed. The aim of the screening is to:

- Determine whether the on-site hazards and risks from the use, storage and processing of potentially hazardous material may have the potential to cause off-site risks
- Determine whether a PHA is required for the Project.

Preliminary Risk Screening

The Project would be assessed against the criteria for Potentially Hazardous Developments provided in *SEPP 33* and *Applying SEPP 33* (NSW DP&I, 2011) to determine whether a PHA is required.

The PHA would consider the storage and handling of hazardous materials at the Project site as well as transport of the materials to and from the site. The storage and handling of FGTR at the site as well as transport to the SUEZ waste facility at Elizabeth Drive, Kemps Creek would be considered.

Preliminary Hazard Analysis:

Should a PHA be required, it would 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 would:

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

The PHA would provide sufficient 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 during the EIS stage. Emergency and incident management measures including for fire management and emergency vehicle access would be outlined in the EIS.

7.9 Socio Economic

7.9.1 Existing Environment

The Project would be located within Randwick LGA which has seen population growth in the order of 11,671 people in the period 2011-2016 (Australian Bureau of Statistics, 2019). The key economic activities in the vicinity of the project site include manufacturing, storage, wastewater treatment, stevedoring and transportation services. Residential receivers are located to the east and north east of the site along Moorina Avenue and Partanna Avenue in the suburb of Matraville. The Sand and Stories Carly Childhood Centre and Montessori Works are located along Moorina Avenue. The Candella Project once developed would comprise industrial/ commercial/ retail receptors located directly adjacent to the east of the Project.

7.9.2 Issues for Consideration

The Project would provide the following direct and indirect social and economic benefits to Sydney region:

- The creation of up to 30 permanent FTE positions during the operation of the Project
- The employment of a construction workforce up to a peak of 400 full time positions during the construction of the Project which would be around 24 months
- Sourcing Project inputs from Australian providers where possible, including significant manufactured units from local original equipment manufacturers.

The Project would help Orora realise significant cost savings through the reduction of energy costs and the diversion of mill residuals from landfill. This would allow Orora to remain competitive in the recycled paper market and assure business continuity and job security for its continued operation. The Project would also require a new PEF Production Plant to be established in Chullora which would involve additional investment in the Sydney Region

Importantly, the Project would also facilitate the introduction of a proven technology in energy recovery plants and PEF into Australia and provide a working model for harnessing the embedded energy from waste materials for other industrial or waste facilities.

However, the Project has the potential to impact upon the amenity of surrounding receptors and land use during construction and operation as a result of air quality, transport, noise and/or visual impacts. The Project also has the potential to impact on offsite property (e.g. Botany Road and pedestrian footpath during the construction of access arrangements and through the use of temporary lay-down areas). The potential impacts on sensitive receptors such as the Sands and Stories Early Childhood Centre and Montessori Works would be given careful attention in the EIS. The community consultation and engagement approach being implemented by SUEZ (Refer to **Section 4.0**) would inform the social impact assessment regarding community perceptions and key concerns and enable incorporation of avoidance, mitigation and management strategies as part of Project planning and EIS preparation.

7.9.3 Proposed EIS Assessment Methodology

The EIS would include a social impact assessment (SIA) prepared consistent with the approach presented in *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).

DPIE has recently released guidelines for the assessment of social impacts in relation to State Significant resource projects - *Social impact assessment guideline for State significant mining, petroleum production and extractive industry development* (Department of Planning and Environment, 2017). Whilst not directly applicable to the project (as the project does not comprise a resource project) this guideline would be considered with respect to the classification of social impacts (s1.1 of the guideline).

The assessment would focus on potential amenity impacts to receptors informed by the technical impact assessments carried out for relevant issues (i.e. air quality, traffic, noise and visual). In addition impacts to social infrastructure and community facilities, public and private land, and local industrial/ commercial land use would be assessed. The SIA would be informed by publicly available information (e.g. census data), as well as feedback received from community and stakeholder consultation and engagement activities undertaken for the Project. It would also address the wider economic benefits of the Project.

7.10 Noise and Vibration

7.10.1 Existing Environment

The existing noise environment surrounding the site is dominated by operations at Orora Recycled Paper Mill, traffic noise from Botany Road and Port Botany operations. The primary activities characterising the local noise environment at the site include:

- Operations at Orora Recycled Paper Mill which operates 24 hours
- Vehicles travelling along Botany Road, including trucks transporting goods to/from the port area and buses travelling to/ from the Port Botany Depot
- Port operations including operation of prime movers and trucks
- Industrial operations in the vicinity
- Aircraft flying to/ from Sydney Airport.

The approved three-storey Candella Project lies 50 m from the eastern boundary of the Project site across the proposed new slip road for that project which would travel alongside the eastern boundary of the site (refer **Figure 5**).

Other receivers in the vicinity of the Project site across Botany Road include industrial and port related premises including DP World stevedores, FedEx World Service Centre, TfNSW, Port Botany Bus Terminal, Visa Logistics Services and Brighton Logistics Australia. The industrial building along McCauley Street to the northwest of the site is shielded by existing Orora Recycled Paper Mill buildings.

Orora Recycled Paper Mill which operates 24 hours conducts an ongoing quarterly noise monitoring programme in compliance with the Ministers Conditions of Approval and EPL licence 1594. Noise monitoring is conducted at six residential receiver locations to the east of the Mill, including at Partanna Avenue and Moorina Avenue, the latter of which is the nearest sensitive receiver to the Project. The results of night time noise monitoring at Moorina Avenue is summarised in **Figure 15**.

A review of historical monitoring records (May 2012- November 2018) for night time noise (L_{AEQ} 15 minute) at No. 24 Moorina Avenue Matraville (Location R6) showed periodic exceedances across the monitoring periods compared to limit values specified in the EPL license (Hutchison Weller 2019). It was also observed that when the Orora Recycled Paper Mill was not operational, the local noise environment is not significantly changed, indicating that existing noise sources surrounding the site (i.e. Port Botany and road traffic) influenced ambient noise levels (Hutchison Weller 2019).

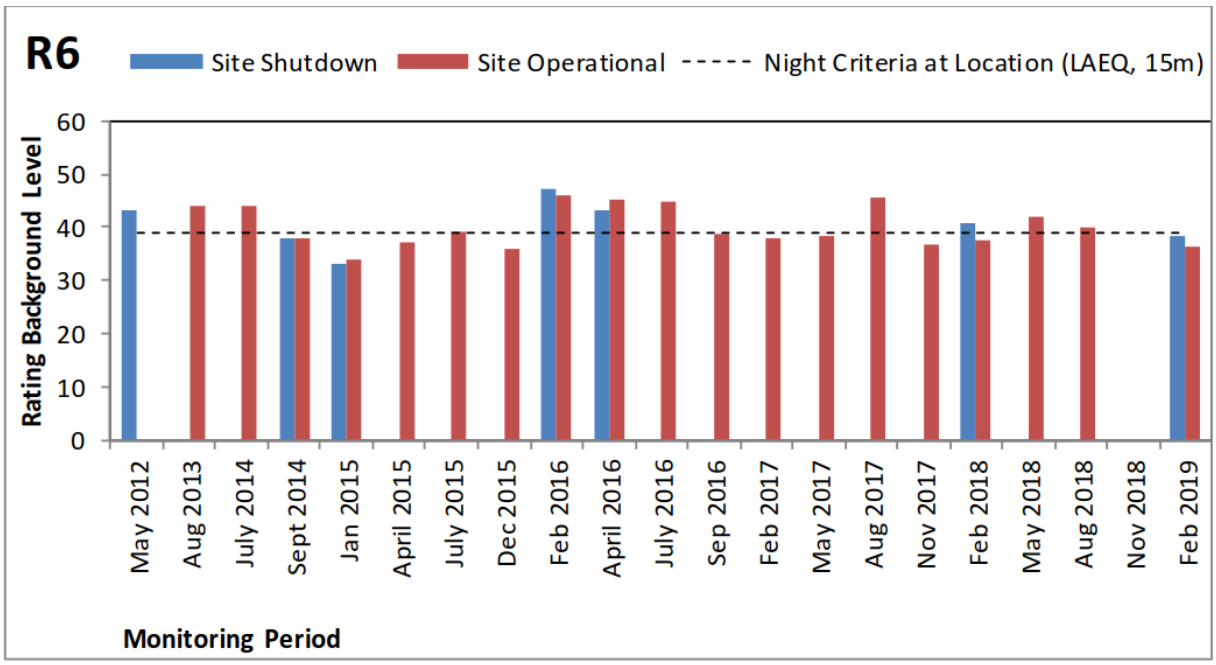


Figure 15 Orora Recycled Paper Mill Night Time Noise Monitoring at No 24 Moorina Avenue (2012-2019) (Source: Hutchison Weller 2019)

7.10.2 Issues for Consideration

Construction

Construction activities would be scheduled during standard construction hours as specified in the *Interim Construction Noise Guideline* (DECC, 2009) (ICNG) as follows:

- Monday to Friday 7am to 6pm
- Saturday 8am to 1pm
- No work on Sundays or public holidays.

The EIS would identify activities or instances where works outside of standard construction hours may be required, e.g. for vent stack installation or works within Botany Road (where required by road authorities).

Potential construction noise impacts may occur during the estimated 24-month construction timeframe as a result of construction activities. Potential construction noise sources include construction vehicles, excavators, piling rigs, heavy lift cranes, concrete trucks, mixers, generator sets and hand tools. The plant and equipment would be similar to that commonly used for civil construction projects.

Given the potential for noise generation during the demolition of Building #B8 prior to development of the Project, it is anticipated that Orora would install a noise barrier along the eastern boundary of the site to mitigate noise impacts to the nearest residential receivers located along Moorina Avenue approximately 130 m from the Project site. Noting that the demolition would be carried out by Orora, the mitigation measures implemented for the demolition of Building #B8 (i.e. installation of a noise barrier), could readily be retained throughout the construction phase of the Project. The details of the noise barrier to be provided along the eastern site boundary would be confirmed as part of the EIS.

Should construction commence on the Candella project (either new slip road or industrial/commercial/ retail buildings) at the same time as construction of the Project, cumulative noise impacts would be considered in the EIS (Refer to **Section 7.15**).

Operation

During the design phase, the design approach adopted and mitigation measures successfully implemented at the reference plant in Suffolk would be considered and where applicable adapted to suit the local Project conditions to minimise noise impacts at surrounding receivers. Noise

assessment findings would inform design refinements of the Project including facility layout and orientation.

The Project would operate 24 hours per day, seven days per week similar to the Orora Recycled Paper Mill. Noise sources during operation would include the boiler, turbine and other equipment as well as truck movements within the Project site and road traffic noise generated when transporting fuel and BCP generated residuals to/ from the Project site. Truck movements within the Project site have been designed to follow a one way route around the BCP building which would bring truck traffic close to the nearest sensitive receptors at Matraville. Following the removal of the #B8 building the noise shielding effect of this building on receivers to the east (in relation to operational noise from the #B9 Mill) would be removed.

The potential noise impacts of the operation of the BCP with consideration to cumulative noise from the existing Orora Recycled Paper Mill site would be assessed at nearest residential receivers at Moorina Avenue and Partanna Avenue as well as the Candella Project. The operation of the Project would also generate additional traffic which would require an assessment of potential road noise traffic.

Vibration

Due to the proximity of the residential receivers at 130 m, construction impacts from piling activities may potentially cause temporary vibration impacts. Selection of suitable piling methods and implementing standard control procedures could minimise potential vibration impacts. Operational activities are unlikely to result in vibration impact to receivers.

7.10.3 Proposed EIS Assessment Methodology

A detailed Noise and Vibration Impact Assessment would be carried out for the Project. The existing background noise monitoring data from Orora Recycled Paper Mill would be reviewed to inform the noise assessment and where required additional monitoring would be carried out to supplement the existing data. The detailed assessment would consider the latest Project layout 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 offsite laydown areas (if noise generating activities are proposed). These would then be assessed in a SoundPLAN model to determine potential impacts at receivers.

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. This would include retaining any noise barrier that would likely be installed for the #B8 demolition works prior to this Project and/or implementing additional mitigation measures. 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) would be provided in the EIS.

Operational Noise

Operational noise impacts from the Project would 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 a SoundPLAN model 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.

Noise mitigation through facility design, layout considerations, plant and equipment selection would be given preference. Successful design options from the reference plants would be considered and adapted to the Project where practical.

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 Botany 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.

7.11 Soils and Water

7.11.1 Existing Environment

Soils

The Soil Landscape at the site is classified as a Disturbed Terrain landscape (eSPADE, 2019) which is attributed to the site being located within a previously developed industrial area in the vicinity of Port Botany. The Disturbed Terrain landscape comprises level plain to hummocky terrain which has been extensively disturbed by human activity, including complete disturbance, removal or burial of soil. Local relief and slopes are highly variable. Landfill includes soil, rock, building and waste materials. Limitations of the Disturbed Terrain landscape include mass movement hazard, unconsolidated low wet strength materials, impermeable soil, poor drainage, localised very low fertility and toxic materials.

The NSW Government SEED environmental data portal, indicates that the site has a low probability of containing Acid Sulfate Soils. The soils within the site are likely to be sandy soils (ARUP 2019).

A search of the NSW EPA Contaminated Land Register on 4 June 2019 did not identify the Project site or any neighbouring site as contaminated. The nearest site listed on the EPA Contaminated Land Register is the 7-11 Service Station Matraville located approximately 700 m to the north east of the site where the contamination consisted of petroleum hydrocarbons.

A review of previous site investigations at Orora Recycled Paper Mill indicated the presence of localised hydrocarbons and traces of asbestos within the Orora Recycled Paper Mill premises in fill buried in the area (ARUP, 2019). In addition, given that the Project site includes the area where the #B8 Paper machine has historically operated (including associated old wastewater treatment plant), there is potential for contaminated materials to be encountered during earthworks.

Surface Water

The surface of the Project site is extensively built up and consists of the #B8 building, paved hardstand areas used for stockpiling, recycled cardboard feedstock and an asphalt paved internal road. Only a narrow strip of land along the southern boundary of the site abutting Botany Road is vegetated with trees. Surface runoff from the built up areas is captured within the stormwater management system of Orora Recycled Paper Mill which is being managed under its EPL licence 1594. The stormwater infrastructure at the Mill connects to the public sewer.

The closest water body is Bunnerong Creek which has been extensively altered due to past development activities. The creek generally flows westwards along the southern perimeter of residential development at Moorina Avenue (approximately 60 m to the east of the site), through a culvert (a Randwick City Council stormwater asset) that runs under the Project site (beneath building #B8) and Botany Road and then on through a channelized waterway (Bunnerong Canal) that discharges into Brotherson Harbour in Botany Bay. There is also a Sydney Water sewer asset beneath the proposed Project site (refer **Figure 5**).

The Orora Recycled Paper Mill operates a wastewater treatment plant in accordance with its EPL conditions. The wastewater from the Project would not be channelled into the Orora Recycled Paper Mill wastewater treatment system.

Topography and Flooding

The Orora Recycled Paper Mill sits on a generally levelled platform that ranges from approximately three to five m AHD.

The existing flood characteristics of the Orora Recycled Paper Mill site were investigated in detail in 2011/12 as part of the development application to develop the #B9 facility. An overland flow and flood study was carried out by SKM (2012) which identified the flood characteristics of the site with the inclusion of the #B9 facility.

The current overland flow path in the vicinity of the Project site is confined to the northern perimeter of the Project site. Overland flows from the catchment in the vicinity of Partanna Avenue (to the east) flow towards the site and are deflected by the eastern wall of the existing #B8 building effectively channelling the flows into the existing culvert which traverses under the Orora Recycled Paper Mill site and discharges to Bunnerong Canal (on the western side of the Mill site) before flowing into Botany Bay. Flood modelling by SKM (2012) indicates that in a 1:100 Average Recurrence Interval event overland overflows could occur at depths of up to 0.5 m flowing east to west along the northern parameter of the Project site and discharging into Bunnerong Canal. The southern portion of the Project site is not identified as being flood affected. Flood characteristics at the Project site are expected to change with the demolition of the #B8 building and development of the Project layout.

Groundwater

The site is located within the Botany Management Zone 1 of the Botany Sands Groundwater Source water asset area which is covered by the *Water Sharing Plan for the Greater Metropolitan Region Groundwater* Sources (NSW Office of Water 2011). Since 2003 there has been an embargo on new applications to extract groundwater within the Botany Management Zone 1 due to legacy pollution from the Orica site (located approximately 1.6 km north) with Chlorinated Hydrocarbons (NSW Office of Water 2011).

Groundwater levels at the Orora Recycled Paper Mill site ranges from approximately two to five m below ground level where the inferred groundwater flow direction was to the southwest (JBS&G, 2018; ARUP, 2019). The Orora Recycled Paper Mill (#B9) currently has the following water access licence (WAL36382) and approval for extracting groundwater (10WA118709).

Historical groundwater monitoring conducted at Orora Recycled Paper Mill identified contaminants of concern including heavy metals, ammonia and heavy fraction hydrocarbons in exceedance of adopted validation criteria.

Although none of the monitoring wells were located specifically within the Project site, it is likely that similar contaminants of concern would be present in groundwater at the Project site and would need to be considered in the EIS particularly if the Project construction works intercept groundwater.

7.11.2 Issues for Consideration

Soils and surface water

Erosion and Sedimentation

During construction, earthworks and excavation works could cause erosion and sedimentation that result in silt laden runoff discharging into receiving waterbodies via stormwater infrastructure.

Flooding and Stormwater

As additional roof and hardstand areas would be constructed as part of the Project, stormwater runoff and discharge characteristics of the Project would be identified and appropriate stormwater management system requirements identified.

Flood characteristics on site as a result of the Project and any offsite changes to flooding would be confirmed as part of the EIS with consideration of the latest building layout at the Orora Recycled Paper Mill site (including recent modifications) and the Project design layout and with consideration to relevant Randwick Council flood management plans. *Contaminated Soil*

Although a site fit for purpose would be provided for the Project by Orora (including site contamination assessment and remediation as required prior to site handover to SUEZ), given the historic operations of the #B8 paper machine at the Project site, there is the potential for residual soil contamination to be

encountered during earthworks and excavation for subfloor works. A Phase I Environmental Site Assessment could be carried out during the EIS to identify potential residual contamination risks and identify measures to be implemented during construction to control soil contamination risks to workers and the receiving environment during earthworks.

During construction spillage and leakage of hydraulic oils, fuel or chemicals have the potential to contaminate soil and surface runoff, if not subject to appropriate control measures.

During operation there is low potential for surface runoff to become contaminated due to coming onto contact with feedstock, residuals, oil drips and chemical/ fuel spills from plant machinery and vehicles. The PEF feedstock would be delivered in closed containers and received into an enclosed receival hall with high speed shutters which would effectively minimise the potential of rain coming into contact with feedstock or of feedstock spilling out. Bottom ash would be transported in closed trucks and FGTR in pneumatic tankers for offsite disposal. The potential for contaminated stormwater from plant and trucks, chemical or ash spillage or leakage during operation of the BCP impacting water quality or receiving waterbodies, would be addressed in the EIS and appropriate mitigation measures recommended.

Wastewater

Wastewater generated during construction would typically include discharges generated from dust suppression, washdown areas and stormwater runoff from construction ancillary facilities. Construction water would be reused on site wherever feasible or discharged into the local stormwater system (subject to meeting appropriate discharge criteria, which would be confirmed as part of the EIS).

Groundwater

The NSW Aquifer Interference Policy sets out the framework for protecting and managing the impacts of aquifer interference activities on NSW's water resources.

Considering the relatively shallow depth of groundwater, which ranges from two to five m below ground level, and the excavation that would be required for construction of the fuel bunker, it is likely that groundwater would be encountered and dewatering would be required. Noting that the groundwater has potential legacy contamination risks, any deep excavation or dewatering works could pose a contamination risk to workers and the environment if not properly managed.

Similar to potential impacts to surface water, chemical spills have the potential to result in contamination of groundwater (E.g. accidental release of hydraulic fluids during construction work, at ground level and/or within excavations). All chemical tanks at the BCP would be constructed with secondary containment to minimise the risk of spillage and contamination of soil or groundwater during operation.

The Project does not require the sourcing of groundwater for construction or operation.

An assessment of whether the Project would encounter and potentially impact groundwater would be provided in the EIS.

Operational Water Balance

The water balance strategy adopted for the Project is to comply with 'zero liquid discharge' as far as practicable. During operation wastewater and stormwater streams from the Project and management options comprise of the following:

- Effluent discharge (process water that has become too concentrated) would be transported to a licensed facility off site for external treatment
- Extinguishing water would be collected in a pit and transported off site to a licensed facility for external treatment
- Runoff rain water would be channelled through an oil/sludge remover before being discharged into the Sydney Water public sewer
- Domestic water would be discharged to the public sewer.

Considering that the Project would transport effluent streams to be treated at licensed wastewater treatment facilities off site and that runoff rainwater as well as domestic waste would be discharged to

the public sewer, the Project has low potential of causing water pollution of Bunnerong Creek and the waters of Port Botany during the operation phase.

7.11.3 Proposed EIS Assessment Methodology

Soils

A Phase I Environmental Site Assessment would be conducted to inform the understanding of residual contamination conditions, the requirement for intrusive investigations and mitigation.

A detailed desktop assessment would be undertaken to review the potential locations of contaminated material on the Project site utilising historic site information. Potential receptors and impacts related to the mobilisation of soils and contamination would be identified. Depending on the outcomes of this assessment, management measures would be developed taking into consideration the management measures outlined in the existing Contaminated Land Management Plan (Orora 2019) for the Mill site.

The EIS would also identify construction management measures and operational controls that would be implemented to minimise the potential for soil contamination via spills and leakages.

Surface Water

A desktop assessment of the potential impact of the Project on surface water receptors during construction and operation would be undertaken. This would include:

- Review of aerial photographs, relevant GIS datasets, meteorological data and any available baseline monitoring of nearby watercourses to characterise baseline surface water conditions
- Review of proposed site operations to identify potential water pollutant sources and pathways
- Quantitative assessment of the potential increases in annual flows and generic pollutants from the Site based on water balance calculations and MUSIC modelling
- MUSIC modelling to estimate the quantity of key stormwater pollutants (total suspended solids, total nitrogen, total phosphorus and gross pollutants as defined by the Botany Bay Water Quality Improvement Plan) being discharged from the Site during existing conditions and post development with consideration to the proposed management measures
- Qualitative assessment of the potential water quality, geomorphology and hydrological impacts to receiving waterways
- Qualitative assessment of impacts to adjacent water users including erosion and sediment control, water supply and licencing issues
- Qualitative assessment of specific pollutants associated with site operations
- Where necessary, measures to mitigate potential impacts during construction and operation would be identified and recommended.

Flooding

A desktop flood impact assessment of the potential impact of the Project on flooding during construction and operation would be undertaken. This would include:

- Review available information relating to flooding conditions in the vicinity of the Site
- Obtain existing flood model (if available) for the local catchment. Where an existing flood model is not available a new model would be developed to represent existing condition
- Undertake a site inspection to confirm/enhance understanding of local drainage conditions and validate model assumptions
- Undertake a qualitative assessment of potential flood impacts during construction
- Undertake flood modelling to assess flood impacts during operation. This would involve modifying the existing flood model to represent the proposed concept design and rerunning the model to assess flood impacts for a range of flood events, notionally the 10% Annual Exceedance Probability up to and including the Probable Maximum Flood (PMF) including consideration of potential climate change affects

- Flood depth, velocity and impact/afflux for the range of events to demonstrate the extent and nature of any hydrologic and hydraulic impacts on neighbouring lands
- Where necessary, the need for measures to mitigate potential impacts during construction and operation would be identified and recommended.
- Provide commentary on the suitability of the proposed land use in the context of the existing flood conditions and flood hazards at the site.
- Identify measures to mitigate potential impacts during construction and operation.

Groundwater

A desktop assessment of local groundwater characteristics would be undertaken. This would include a review of groundwater information obtained from monitoring wells on the Orora Recycled Paper Mill premises and adjoining sites. From this review, characteristics including groundwater depth, potential interaction with adjoining aquifers or interactions with surface waters would be identified. This information would be reviewed in light of the required excavations for the Project to determine potential interactions with and impact to groundwater and potentially contaminated groundwater. The assessment would cover dewatering activities if required for construction works associated with the fuel bunker or other foundation works.

7.12 Aircraft Safety

7.12.1 Existing Environment

The Project site is located approximately 3.5 km to the Southwest from Sydney Airport and 2.9 km east of the third runway. The Project site lies within the Horizontal Inner Surface area of the Obstacle Limitation Surface (OLS) for Sydney Airport where height restrictions apply to safeguard aircraft safety when operating at low altitudes and at critical flight stages in the vicinity of airports.

7.12.2 Issues for Consideration

The control of building height restrictions of new development in the vicinity of airports rests with CASA. SUEZ has initiated stakeholder consultation (Refer to **Section 4.3.1**) early and obtained feedback on the technical aspects of the assessment required for CASA to make a determination in accordance to the *Civil Aviation Safety Regulations 1998*.

The location of the Project and the preliminary design of the Project stack height of 60 m AHD warrants a plume rise assessment to be conducted and a determination to be made by CASA with regard to aircraft safety. In addition, given the proximity to Port Botany, consideration would be given to any impact on Port communication and radio towers.

7.12.3 Proposed EIS Assessment Methodology

A plume rise assessment would be conducted in accordance to the Advisory Circular 139-05 c3.0 (Advisory Circular) (CASA, 2019). The assessment would use the Screening Tool and Spillane Method to model the critical plume height using conservative data from the nominated reference plant, worst case meteorological conditions (calm weather) and the Project design stack height of 60 m AHD (subject to design confirmation). Depending on the outcome of the assessment, it would be determined if an *Application for Operational Assessment of a Proposed Plume Rise* (Form 1247) is required to be submitted to CASA to allow a determination with respect to a potential hazard and its mitigation as defined in the Regulation 139.370 of the *Civil Aviation Safety Regulations 1998*.

A Plume Rise Assessment section would be prepared and included in the AQIA report. The report would detail the assessment methodology, assumptions, input data, outcome of the assessment and recommendation on whether an *Application for Operational Assessment of a Proposed Plume Rise* (Form 1247) is required to be submitted to CASA to allow a determination to be made. If required, the determination by CASA and recommended mitigation measures would be included in the EIS. In addition, the EIS would give consideration to any impact on Port communication and radio towers.

7.13 Greenhouse Gas and Energy Efficiency

7.13.1 Existing Environment

Orora Recycled Paper Mill currently generates 235,662 tonnes CO_2 of GHG emissions (FY2019) from the following direct, indirect and other sources (Orora, 2019):

- Natural Gas combustion for steam boilers
- Diesel fuel combustion for generator sets
- Fuel combustion by trucks hauling raw materials, products and/ or waste (including transporting mill residuals to landfill), forklifts and other vehicles
- Consumption of purchased grid electricity

7.13.2 Issues for Consideration

Construction

The construction of the Project would contribute to GHG emissions, either directly or indirectly, as a result of:

- Fuel combustion from the operation of construction plant, generator sets and site vehicles
- Electricity used to power construction plant and site offices
- Indirect GHG emissions such as through embedded energy of construction materials and the transport of materials.

Operation

The operation of the Project would contribute to GHG emissions, either directly or indirectly, from:

- Stationary (non-transport) sources: combustion of PEF and mill residuals, natural gas combustion for start-up and control of combustion in the incinerator and use of diesel fuel in generators onsite, as applicable
- Mobile sources: including trucks, cars, forklifts etc owned or leased by SUEZ and which fall within the organisational boundary, as applicable. Note that GHG emissions from transporting mill residuals to landfill would be reduced due to the feedstock being transferred to the BCP
- Use of air conditioning equipment (if applicable)
- Consumption of purchased grid electricity. This would be reduced substantially as electricity would be generated from the turbine at the BCP for use in the BCP and Paper Mill. In addition, when demand at the Mill drops due to maintenance down time or operational dips, surplus electricity generated would be fed into the grid
- Material transport (if another company's fleet vehicle is used to transport material to or from the facility, such as for delivery of process chemicals)
- Land use change (E.g. removal or planting of trees, if applicable).

Although both PEF and mill residuals would likely contain some organic residues (e.g. timber/ textiles in the PEF and paper pulp in the mill residuals), utilising these as feedstock is likely to result in a reduction in GHG emissions when compared to firing natural gas. The EIS would demonstrate the net GHG benefits of the project in offsetting current emissions at the Orora Recycled Paper Mill and on a life-cycle basis (in diverting waste from landfill).

SUEZ would employ its experience and best management practices in operating energy recovery plants to optimise the efficient operation of the BCP to match the energy requirements of the Orora Recycled Paper Mill.

7.13.3 Proposed EIS Assessment Methodology

A quantitative analysis of potential Scope 1, 2 and 3 GHG emissions of the Project and an assessment of potential impacts on the environment would be provided in the EIS.

The GHG assessment would be undertaken in accordance with current guidelines, including:

- *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (World Council for Sustainable Business Development and World Resources Institute 2005)*
- *National Greenhouse and Energy Reporting Act 2007 (Commonwealth)*
- *AS ISO 14064.1:2006 Greenhouse Gas Part 1: Specification with guidance at the organisational level for quantification and reporting of greenhouse gas emissions and removals*
- *The current Australian National Greenhouse Accounts: National Greenhouse Accounts Factors (NGA Factors) (Department of the Environment) and the current National Greenhouse and Energy Reporting (Measurement) Technical Guidelines (NGER Technical Guidelines) (Department of the Environment.*

The EIS would include a description of construction and operational control measures that would be implemented to ensure the Project is energy efficient and minimises GHG generation.

7.14 Sustainability

7.14.1 Existing Environment

The operation of the Orora Recycled Paper Mill is governed by Orora's corporate Environment Sustainability and Governance policies. Consistent with these objectives Orora currently sources all of its grid electricity requirements from renewable energy sources as part of a power purchase agreement with Macquarie Group. There is also increasing expectation on the part of Orora's upstream and downstream clients (e.g. waste paper suppliers and finished product buyers) for greater demonstration of sustainability built into the supply chain.

Sustainability objectives as well as the need to become more competitive in a tightening market have driven Orora's pursuance of alternative fuel options to supply the Mill's energy requirements and maximise diversion of waste streams from landfill. The Project would assist Orora in moving towards the decarbonisation of its Mill operations (by moving away from gas-fired operations) aligning with its own sustainability objectives and broader market drivers for sustainability initiatives. Further details on the need and sustainability benefits of the project are identified in **Sections 1.6** and **2.0**.

7.14.2 Proposed EIS Assessment Methodology

The Project would be assessed against the principles of sustainability in accordance with the EP&A Act. A review and assessment would be carried out of the Project's alignment with relevant sustainability guidelines and policy frameworks, including targets and strategies to improve efficiency in the use of water, waste, energy and transport (e.g. NSW Government Resource Efficiency Policy, NSW Waste Avoidance and Resource Recovery Strategy 2014-21). The Project would also be assessed against the principles of ecologically sustainable development (ESD) and where appropriate design considerations and mitigation measures to promote sustainable construction and operation of the Project would be demonstrated.

The outcome of the sustainability assessment would be documented in a section of the EIS.

7.15 Cumulative Impacts

7.15.1 Existing Environment

Operations at the existing Orora Recycled Paper Mill and the construction of the Candella Project adjacent to the site (should construction timing coincide) have the potential to generate cumulative impacts through interactions with the Project.

A search of the DPE Major Projects Register on 12 June 2019 did not identify any new major development proposals within 1 km of the site. The Orora Recycled Paper Mill is currently seeking a modification to its approval in relation to operational production (MP05_0120-MOD-9) and this application would be considered as part of the Project EIS in establishing existing baseline conditions for the assessment of relevant issues (e.g. traffic, air quality).

7.15.2 Issues for Consideration

The Candella project may commence construction of the planned new slip road and/ or industrial/ commercial/ retail buildings during the same period as the Project or there is a possibility that some stage of the construction schedules may overlap. Such an overlap would result in cumulative impacts such as noise and dust to residential receptors and traffic impacts to vehicles and pedestrians using Botany Road. These cumulative impacts would be restricted to the construction phase, be temporary in nature and would be assessed in the EIS including measures to work proactively with the Candella construction contractor to minimise cumulative impact generation (e.g. through the scheduling of noisy works so they don't coincide and coordination of road works). Should construction of the Candella Project occur before Project construction commences, the Candella project which is located between the Project site and the residential receptors may serve to buffer construction impacts generated by the Project on residential receptors along Moorina Avenue.

During construction, the demolition of the #B8 facility and site preparation works by Orora could occur immediately prior to the commencement of construction of the Project potentially resulting in construction fatigue impacts at surrounding receivers. Construction works at the Project (including traffic generation) also has the potential to disrupt operations at the Orora Recycled Paper Mill if not appropriately managed. Noting that Orora is a strategic partner in the development of the BCP, Project development could be coordinated and mitigation measures implemented to minimise cumulative impacts, such as installation of noise barriers, integrating the Traffic Management Plan and coordinating work schedules to prevent major clashes or bottlenecks.

With respect to operational impacts, the cumulative emissions from the BCP combined with the Orora Recycled Paper Mill operations and other surrounding industrial land use would form a key component of the impact assessment (in terms of appropriate accounting of background conditions). This would be the case for the assessment of operational air quality, human health risk, noise and traffic impacts on receivers located in the vicinity of the Project. Mitigation and management measures recommended in the specialist reports for these issues would identify measures to minimise Project contributions to overall cumulative impacts.

The potential cumulative impacts identified are based on an initial review, preliminary assessments and stakeholder consultation conducted at the time of preparation of this Scoping Report. Any new or additional potential cumulative effects that are identified as the Project and environmental assessments are progressed (including any new development applications or approved projects in the vicinity of the Project) would be assessed in the EIS (as relevant).

7.15.3 Proposed EIS Assessment Methodology

The potential for the Project to contribute to cumulative effects in the area would be assessed and documented within the EIS. The technical impact assessments for air quality, human health risk, noise and traffic would include consideration of cumulative contributions from existing land use (including the Orora Recycled Paper Mill) to appropriately account for existing background conditions in the impact assessment and identify Project contributions. The assessments would recommend measures to minimise and control Project contributions to impacts as necessary.

Qualitative assessments of cumulative impacts would be undertaken for other issues with consideration to background conditions (based on publicly available information) and the consideration of any new or approved development in the vicinity of the Project site.

7.16 Heritage

7.16.1 Existing Environment

Aboriginal Heritage

AHIMS database searches conducted on 19 June 2019 (AHIMS Searches #428994 and #429044) identified no registered sites within the bounds of the Project site and 44 sites in the surrounding area. The closest surrounding sites comprised two midden sites (#45-6-0976 and #45-6-1152) approximately 270 m to the south of the Project site. The AHIMS search results are attached in **Appendix B**.

Non-Aboriginal Heritage

Searches of relevant historic heritage registers and lists, both statutory and non-statutory, were undertaken on 19 June 2019 to identify any previously recorded historic heritage items within 100 m of the Proposal area. Search results are provided in **Table 16**.

Table 16 Non-Aboriginal Heritage Search Results

Heritage list	Items within the Proposal area	Level of significance	Items adjacent to the Proposal area	Level of significance	Distance to Project area (m)
World Heritage List	Nil	n/a	Nil	n/a	n/a
National Heritage List	Nil	n/a	Nil	n/a	n/a
Commonwealth Heritage List	Nil	n/a	Nil	n/a	n/a
Register of the National Estate (non-statutory)	Nil	n/a	Nil	n/a	n/a
State Heritage Register	Nil	n/a	Nil	n/a	n/a
NSW State Agency Section170 Heritage and Conservation Register	Nil	n/a	Nil	n/a	n/a
EPBC Register Search	Nil	n/a	Nil	n/a	n/a
Randwick LEP 2012	Nil	n/a	Post-war Brick House (I240) 18 Moorina Avenue Late Modern house (I241) 34 Murrabin Avenue	Local Local	125 m 280 m

The search results did not identify any listed heritage items within the Project site or within close proximity. The nearest listed sites (two LEP listed buildings) are located some 125 m and 280 m from the Project site. At this distance direct and/ or indirect impacts to the items would be unlikely.

The Non-Aboriginal Heritage database search results are provided in **Appendix C.**

7.16.2 Issues for Consideration

The Project site is within the Orora Recycled Paper Mill site which has been operating for more than 115 years and would be located where the decommissioned paper mill #B8 currently sits. The construction of the #B8 Paper Mill Building would have involved substantial foundation works considering the high load requirements needed for paper machines. The areas surrounding Building #B8 includes a road and hardstand yard area which would have also involved previous earthworks or foundation works. Considering that the site has been highly disturbed over the years and given the developed nature of the site and surrounds, it is considered highly unlikely that the Project site would contain any in-situ Aboriginal cultural heritage items.

No listed heritage items have been identified to occur within the Project site. As construction works would be confined to the project site and its immediate surrounds (i.e. access works at Botany Road) it is considered unlikely that Project would result in any direct or indirect impacts to listed heritage items identified in the surrounding area (including from construction vibration).

7.16.3 Proposed EIS Assessment Methodology

An Aboriginal heritage due diligence assessment would be conducted in accordance with OEH's *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (DECCW 2010). The

assessment would involve conducting a desktop review of the existing environment, available Aboriginal archaeological reports for the Project Area and field inspection. A short report would be prepared with management advice for any identified/potential Aboriginal heritage constraints.

A historical assessment would be undertaken which would include searches of relevant historic registers, desktop review of historic heritage reports, a site inspection and sensitivity mapping of historical heritage items. A Statement of Heritage Impact and historical heritage assessment would be prepared for the Project which would include management advice for any identified/ potential historic heritage constraints.

7.17 Flora and Fauna

7.17.1 Existing Environment

The Project site is located within the Orora Recycled Paper Mill which has been operating at the site for 115 years. The Project footprint is where the B8 decommissioned paper mill currently sits and includes a paved yard and a paved internal road. Almost the entire site is built up with the exception of a narrow fringe of trees along the southern site boundary abutting Botany Road. The vegetation within this narrow strip consists of a range of native and exotic species including eucalypts, figs and melaleucas. A number of common environmental urban weeds are also present including asparagus fern and camphor laurel.

There is no threatened flora habitat within the Project site. Vegetation within and surrounding the Project site consists of a mixture of urban exotic/ native species and has been extensively modified by urban development. The composition and structure of the vegetation present retains no similarity with the vegetation that would have originally occupied the Project site or region generally.

A search of the NSW BioNet Atlas (**Appendix D**) database did not identify any threatened species located within the Project site. The database identified several threatened fauna species that have been recorded in the vicinity which include the Grey-headed Flying-fox (*Pteropus poliocephalus*) and Swift Parrot (*Lathamus discolour*). The vegetation present is unlikely to provide suitable habitat for foraging or nesting for the Swift Parrot. Whilst the Grey-headed Flying-fox is known to forage in urban areas, and there is one Moretan Bay Fig within the strip of vegetation within the site, being highly mobile it is unlikely that the site provides a key feeding area for this species. Use of the area by this species is likely to be highly intermittent at best.

Bunnerong Creek, which has been highly modified, flows through a culvert beneath the Project site and along a channelized waterway before eventually discharging into the waters of Brotherson Dock in Port Botany in Botany Bay.

7.17.2 Issues for Consideration

Potential impacts to biodiversity that could occur during construction include:

- Removal of the strip of vegetation along the southern boundary of the of the site (if the new slip road access option is progressed)
- Removal of the fauna habitat value associated with the strip of mixed exotic and native vegetation
- Potential direct impacts upon fauna such as construction vehicle strike and noise, vibration and lighting disturbances
- Wind-blown dust on vegetation smothering leaves and causing a reduction in photosynthesis
- Erosion and sedimentation resulting in loss of soil and sedimentation smothering vegetation/habitats where eroded material is deposited.

These impacts would be managed through mitigation measures developed as part of the EIS and implemented through Construction Environmental Management Plans.

Hot emissions from the stack (60 m) may impact birds that fly at that altitude. However considering that the Orora Recycled Paper Mill currently has two operating stacks which are higher and the stationary nature of the stacks which can be easily avoided (in comparison to a moving tall structure such a wind turbine), the potential for causing impact is considered to be low.

Contaminated runoff or spills from the Project if it enters Bunnerong Creek may flow into Brotherson Dock in Port Botany within Botany Bay and potentially impact aquatic species. However, considering that Towra Point Nature Reserve (a RAMSAR site) and the Kurnell wetlands (a Nationally important wetland) which are both listed as matters of national significance in the EPBC Act are located over six km from the Project site across Botany Bay, it is unlikely that the Project would impact these sensitive aquatic habitats. Construction measures and operational procedures would be detailed in the EIS to manage and control contaminated soil runoff (if encountered) and to control spills and leakages.

As the feedstock would be restricted to only non-putrescible materials, a biosecurity risk assessment is not deemed necessary. Best management practices for housekeeping would be addressed in the EIS.

7.17.3 Proposed EIS Assessment Methodology

A biodiversity assessment chapter would be prepared in 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 would 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.

BDAR Waiver

Section 7.9 of the BC Act requires that an application for SSD must be accompanied by a biodiversity assessment report (BDAR) unless it is determined by the Chief Executive of the OEH and the Secretary of the DPIE (or their delegates) that the proposed development is not likely to have any significant impact on biodiversity values. That determination is referred to as a BDAR waiver.

As described above, considering that the Project is located within a highly modified brownfield site where a paper mill has been operating for 115 years, and only a narrow strip of mixed native and exotic vegetation is present which is unlikely to hold biodiversity values, it is unlikely that that Project would have a significant impact on any biodiversity values as prescribed in the *Biodiversity Conservation Regulation 2017*.

An initial assessment of biodiversity issues required by OEH and DPIE to inform a determination has been carried out that indicates the Project would not take place in an area of significant biodiversity value, nor would it have a significant direct or indirect effect on biodiversity values such as threatened species or ecological communities, or other values prescribed in the *Biodiversity Conservation Regulation 2017.* Based on this, an application for a BDAR waiver has been submitted for the Project which addresses the issues required by OEH and DPIE to inform a determination concurrently with this Scoping Report. Should this determination occur, the method of assessment for biodiversity nominated in the SEARs would reflect the BDAR waiver.

A copy of the BDAR Waiver application is included in **Appendix E**.

7.18 Other Environmental Issues

Where additional relevant issues or aspects are identified during the preparation of the EIS including through stakeholder consultation, these would be subject to risk screening and assessment in the EIS commensurate with the level of risk and sensitivity identified.

8.0 Conclusion

SUEZ is seeking approval for the Project under Division 4.7 of Part 4 of the EP&A Act. This Scoping Report provides a preliminary assessment of the environmental and planning considerations to guide the preparation of SEARs for the SSD application. The key areas that have been identified for further detailed assessment during the preparation of the EIS are:

- Air quality in relation to emissions from operation of the BCP 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
- 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 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 operation of the Project
- Socio and economic impacts including the potential benefits relating to increased employment opportunities and amenity impacts
- Noise and vibration from construction and operational activities and potential impacts to sensitive receivers
- Soils and water in relation to potential for the Project to result in additional contamination, stormwater and wastewater management during construction and operation and erosion and sedimentation control during construction
- Aircraft safety risk due to plume from the stack
- GHG emissions generated by the Project
- Sustainability in design
- Cumulative impacts during construction and operation.

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

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

In assessing the Project, the key focus would be avoidance and minimisation of impacts on the environment and local communities, where practical and feasible, when taking into consideration engineering constraints and cost implications. The assessment would also identify mitigation and management measures to minimise impacts on the environment during construction and operation of the Project. Consultation with stakeholders and the local community would continue throughout the Project assessment, design and construction phases.

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

9.0 References

ansongroup (2019) Orora Botany, 1891 Botany Rd, Matraville: Sailfish Project Review and Due Diligence Advice.

ARUP (2019) Project Sailfish Energy Recovery Facility, Early Geotechnical Instigation Brief.

Australian Bureau of Statistics, (2019), *2016 Census QuickStats – Randwick (C)* Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/LGA16550?opendocument

Australian Government Bureau of Meteorology (2019), *Climate statistics for Australian locations – Summary statistics Sydney Airport*, Available at: http://www.bom.gov.au/climate/averages/tables/cw_061078.shtml

Australian Government Department of the Environment and Energy (2019) *EPBC Act Protected Matters Report*, Available at: http://www.environment.gov.au/webgis-framework/apps/pmst/pmst.jsf

BOM (2019) *Atlas of Groundwater Dependent Ecosystems*, http://www.bom.gov.au/water/groundwater/gde/map.shtml

Orora (2019) Orora Botany Mill DA05_0120 Annual Environmental Monitoring Report (July 2019-June 2019) Draft

CASA, 2019, Advisory Circular AC 139-05 v3.0 Plume Rise Assessments, January 2019

Department of Environment & Climate Change NSW (2009), *Interim Construction Noise Guideline,* Available at: https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/noise/09265cng.pdf

Elton Consulting (2019), Alternative Waste Technology Research – Research Report (Draft 15 April 2019).

Engage Victoria (2019) *Australian Paper Energy from Waste Works Approval Application 20B Conference Clarifications*. Available at: https://s3.ap-southeast-2.amazonaws.com/hdp.au.prod.app.vic-engage.files/1515/4329/6874/AP_responses_to_questions_asked_at_the_S20B_conference.pdf

Environmental Risk Sciences Pty Ltd (2019) Review – *Preliminary Air Quality Assessment, Orora Waste to Energy Facility (2019).*

EPA Victoria (2019) *EPA grants Australian Paper waste facility works approval*. Available at https://engage.vic.gov.au/epa-works-approvals/australian-paper-wa

Hutchison Weller (2019) B9 Paper Mill – EPL Compliance February 2019 Quarterly Noise Monitoring Report.

JBS&G (2018) Groundwater Monitoring Event at Orora Botany Mill B9 Project 1891 Botany Road, Matraville, NSW prepared for Orora Limited.

Katestone Environmental Pty Ltd (2019) *Preliminary Air Quality Assessment for Ourora Waste to Energy Facility.*

Noise Policy for Industry (2017), *Noise Policy for Industry,* Available at: https://www.epa.nsw.gov.au/publications/noise/17p0524-noise-policy-for-industry

NSW Department of Primary Industries (2019) Botany Sands Groundwater, Available at: https://www.industry.nsw.gov.au/water/allocations-availability/temporary-water-restrictions/botany-sands-gw

NSW EPA (2017), *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*, Available at: https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/air/approved-methods-for-modelling-and-assessment-of-air-pollutants-in-nsw-160666.pdf

NSW EPA (2019), *Search for Environment Protection licences, applications, notices, audits or pollution studies and reduction programs,* Available at: https://apps.epa.nsw.gov.au/prp oeoapp/

NSW EPA (2019), *Search the contaminated land record*, Available at: https://apps.epa.nsw.gov.au/prclmapp/searchregister.aspx

NSW Government (2011), *Hazardous and Offensive Development Application Guidelines, Applying SEPP 33*, Available at: https://www.planning.nsw.gov.au/-/media/Files/DPE/Guidelines/hazardous-and-offensive-development-application-guidelines-applying-sepp-33-2011-01.ashx?la=en

NSW Government (2011), *Hazardous Industry Planning Advisory Paper No 6, Hazardous Analysis,* Available at: https://www.planning.nsw.gov.au/-/media/Files/DPE/Other/hazardous-industry-planning-advisory-paper-no-6-hazard-analysis-2011-01.ashx?la=en

NSW Government (2011), *Multi-level Risk Assessment*, Available at: https://www.planning.nsw.gov.au/-/media/Files/DPE/Guidelines/assessment-guideline-multi-level-risk-assessment-2011-05.ashx?la=en

NSW Government (2017), *Community and Stakeholder Engagement*, Available at: https://www.planning.nsw.gov.au/-/media/Files/DPE/Guidelines/guideline-6-draft-community-and-stakeholder-engagement-2017-06.ashx

NSW Government (2017), *Scoping an Environmental Impact Statement*, Available at: https://www.planning.nsw.gov.au/-/media/Files/DPE/Guidelines/guideline-3-draft-scoping-an-environmental-impact-statement-2017-06.ashx

NSW Government (2018), *Community Participation Plan,* Available at: https://www.planning.nsw.gov.au/-/media/Files/DPE/Plans-and-policies/community-participation-plan-draft-2018-10.ashx

NSW Government (2018), SEED – *Sharing and Enabling Environmental Data,* Available at: https://www.seed.nsw.gov.au/

NSW Government Environment & Heritage (2018) *NSW BioNet* Available at: http://www.bionet.nsw.gov.au/

NSW Government Environment, Climate Change & Water (2011), *NSW Road Noise Policy*, Available at: https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/noise/2011236nswroadnoisepolicy.pdf

NSW Government, (2019), *Soil profile - Disturbed Landscapes eSPADE,* Available at: https://www.environment.nsw.gov.au/Salis5app/resources/spade/reports/9130xx.pdf

NSW Office of Environment and Heritage (n.d), *Search for NSW heritage,* Available at: http://www.environment.nsw.gov.au/heritageapp/heritagesearch.aspx.

NSW Office of Water (2011) Water Sharing Plan Greater Metropolitan Region Groundwater Sources Background document. Available at: http://www.water.nsw.gov.au/__data/assets/pdf_file/0005/548105/wsp_metro_groundwater_background.pdf

NTC Australia, (2017), *Australian Code for the Transport of Dangerous Goods by Road & Rail, Edition 7.5* Available at: https://www.ntc.gov.au/Media/Reports/(91D53582-C568-8B4A-6C7C-E746D36C65FD).pdf

Office of Environment and Heritage (2013) *Aboriginal Heritage Information Management System* Available at: http://www.environment.nsw.gov.au/licences/AboriginalHeritageInformationManagementSystem.htm,

Randwick City Council (2019) *Randwick Local Environmental Plan 2012,* Available at https://www.randwick.nsw.gov.au/planning-and-building/planning/local-environmental-plan-lep