NSW GOVERNMENT | Planning & Environment

STATE SIGNIFICANT DEVELOPMENT ASSESSMENT:
Eastern Creek Energy from Waste Facility
SSD 6236

Assessment Report
Section 4.40 of the
Environmental Planning and Assessment Act 1979

April 2018

Cover photo: Proposed energy from waste facility, Eastern Creek

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ABBREVIATIONS AND DEFINITIONS

AHD	Australian Height Datum
Amended EIS	Amended Environmental Impact Statement titled *Amended Environmental Impact Statement, The Next Generation Energy from Waste, Honeycomb Drive, Eastern Creek,* prepared by Urbis Pty Ltd dated November 2016
Applicant	The Next Generation (NSW) Pty Ltd
AS	Australian Standard
AWT	Alternative waste treatment
BCA	Building Code of Australia
C&D waste	Construction and demolition waste
C&I waste	Commercial and industrial waste
CEMP	Construction Environmental Management Plan
CIV	Capital Investment Value
Commission	Independent Planning Commission
Construction	The demolition of buildings or works, carrying out of works, including earthworks, erection of buildings and other infrastructure covered by this consent
Council	Blacktown City Council
CRW	Chute residual waste
DA	Development Application
Demolition	The removal of buildings, sheds and other structures on the site
Department	Department of Planning and Environment
Development	The development as described in the RTS for an energy from waste facility
DGRs	Director General's Requirements
DPI	Department of Primary Industries
EIS	Environmental Impact Statement titled *Environmental Impact Statement, The Next Generation NSW Energy from Waste Facility, Eastern Creek,* prepared by Urbis Pty Ltd dated April 2015
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPA	Environment Protection Authority
EPI	Environmental Planning Instrument
EPL	Environment Protection Licence
Minister	Minister for Planning (or delegate)
MPC	Materials Processing Centre
MSW	Municipal solid waste
OEH	Office of Environment and Heritage
PEF	Processed engineered fuel
PFM	Planning Focus Meeting
RDF	Refuse derived fuel
Residual waste fuel	Waste feedstock for the facility comprising waste produced from material recovery processes or source-separated collection systems
RMS	Roads and Maritime Services
RTS	Response to Submissions titled *Response to Submissions Report SSD 6236: Energy from Waste, Eastern Creek,* prepared by Urbis dated 14 December 2017
Secretary	Secretary of the Department of Planning and Environment, or nominee
SEPP	*State Environmental Planning Policy*
Sensitive receiver	A location where people are likely to work or reside, this may include a dwelling, school, hospital, office or public recreational area
SRD SEPP	*State Environmental Planning Policy (State and Regional Development) 2011*
SRF	Solid recovered fuel
SSD	State significant development

TABLE OF CONTENTS

FIGURES

EXECUTIVE SUMMARY

Introduction

The Next Generation (NSW) Pty Ltd (the Applicant) is seeking development consent to construct and operate a large-scale energy from waste facility at Eastern Creek in the Blacktown City Local Government Area (LGA) in Western Sydney. The facility would be the first of its kind in New South Wales (NSW) and would thermally treat unrecyclable non-putrescible residual waste from Sydney-based recycling facilities, primarily from construction and demolition (C&D) and commercial and industrial (C&I) sources.

During the assessment process, the Applicant has amended the development application on two occasions, reducing the scale of the facility from a maximum capacity to thermally treat 1.35 million tonnes per annum (tpa) to 552,500 tpa of residual waste fuel. The amendments were made in response to significant concerns raised by the Department of Planning and Environment, the Department's two independent experts and key government authorities as well as significant public opposition to the proposal. The second amendment described in the Applicant's Response to Submissions (RTS) comprises only Stage 1 of the original two-staged proposal. Stage 2 of the development would be the subject of a separate development application, should Stage 1 be approved.

Throughout the assessment process the Department, its experts and key government authorities, including Blacktown City Council (Council), the Environment Protection Authority (EPA) and the NSW Western Sydney Local Health District (NSW Health) have asked a number of questions about the proposal and the Applicant's assessment to understand its potential impacts. Significant concerns have been raised regarding the consistency of the proposal with the requirements of the *NSW Energy from Waste Policy Statement* (EPA 2015) (EfW Policy) and the robustness of the Applicant's human health risk assessment.

NSW Health, Council and Penrith City Council have maintained their objection to the proposal throughout the assessment and the EPA has maintained its view that the proposal is inconsistent with the EfW Policy.

NSW Policy Framework

In 2015, the EPA released the EfW Policy to increase investment in energy from waste infrastructure and deliver regulatory certainty to industry and confidence to the wider community. The EfW Policy sets out a framework for the operation of new purpose-built facilities and other existing facilities proposing to thermally treat waste or waste-derived materials for the recovery of energy. The EfW Policy aims to ensure that all energy from waste facilities:

- have minimal risk of harm to human health and the environment
- have community acceptance to operate
- will not undermine higher order waste management options, such as avoidance, reuse or recycling.

The EfW Policy underpins the key policy objectives of NSW's waste legislation, being:

- the *Protection of the Environment Operations Act 1997,* which sets the framework to ensure human health and the environment are protected
- *Waste Avoidance and Resource Recovery Act 2001* (WARR Act), which aims to ensure waste management is considered in an orderly manner (in accordance with the outcomes to avoid, reuse, recycle and energy recovery).

As such, the EfW Policy is important for the Department to consider as it is the primary policy in NSW which governs the assessment and consideration of energy from waste facilities. It provides key requirements to assess the performance of a facility to ensure air quality and human health are protected and to determine if the proposal is in the public interest, which are all matters required to be considered by a consent authority under section 4.15 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The proposed development is the first proposal for a purpose-built energy from waste facility to be assessed against the EfW Policy in NSW.

The EfW Policy, WARR Act and the *NSW Waste and Resource Recovery Strategy 2014-21* (WARR Strategy 2014-21) are underpinned by the waste hierarchy (see **Figure 1**). The waste hierarchy provides guidance on the order of preference for a range of waste management approaches to achieve efficient resource use. The recovery of energy is included in the waste hierarchy, however it is considered a less preferred approach to the higher order outcomes of avoid, reduce, reuse and recycle.

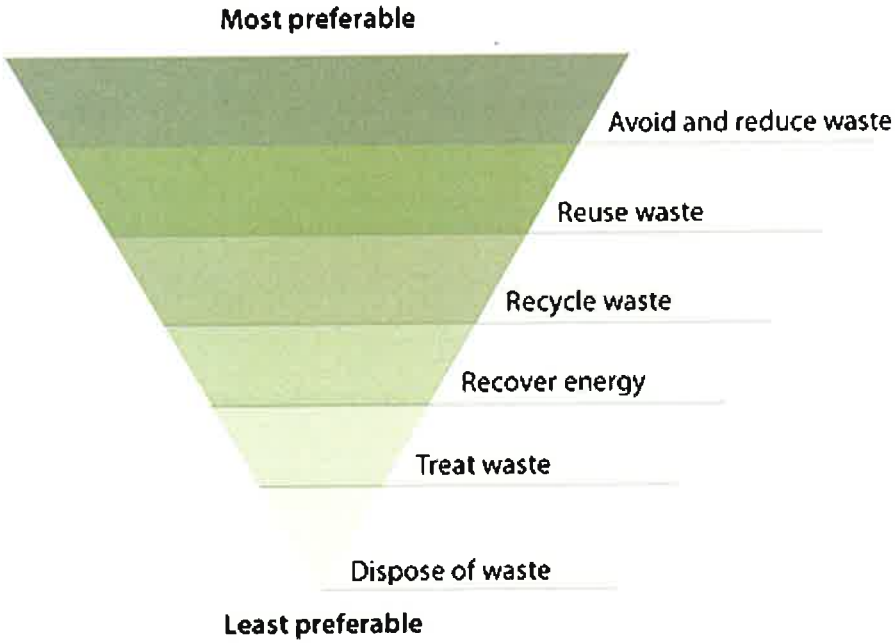

Figure 1: *The Waste Hierarchy*

Independent Experts

Due to the nature and technical complexity of the proposal, the Department and the EPA jointly engaged Environmental Risk Sciences Pty Ltd (EnRisks), an independent expert in the field of human health risk assessment (HHRA), and ARUP Pty Ltd, an expert in international best practice waste to energy engineering, to assist in the assessment of the proposal. These experts were engaged in 2014 at the onset of the assessment process, prior to lodgement of the Applicant's Environmental Impact Statement (EIS). The Department sought their expert advice throughout the assessment, particularly with respect to the consistency of the proposal with the requirements of the EfW Policy and the robustness of the Applicant's HHRA. Throughout the assessment process, the experts have raised significant concerns regarding the rigour of the Applicant's assessment of these matters. The experts have formally reviewed the application three times and have met with the Applicant and its consultants on two occasions.

Despite two significant amendments to the proposal, ARUP maintains its view the proposed development is inconsistent with the EfW Policy. EnRisks advises it is not possible to be confident the HHRA is appropriate and sufficiently conservative and therefore the risk to human health is unknown.

The Amended Development Application

The facility proposes to use moving grate technology to thermally treat up to 552,500 tpa of residual waste fuel. Emissions from the process would be treated to remove harmful pollutants prior to being emitted via a 100 metre (m) high emission stack. The energy released from the thermal treatment of waste would be used to produce superheated steam which would drive a turbine generator to produce up to 76 megawatts of electricity (MWe). Approximately 68.7 megawatts (MW) would be exported to the national grid and the remaining 7.3 MW would be reserved for operational purposes on the site.

The facility would operate 24 hours a day, seven days a week. An artist's impression of the proposed development is shown on the cover of this report.

The residual waste fuel would be sourced from existing and planned facilities under the Applicant's control, including the existing Genesis Xero Waste Materials Processing Centre (MPC) and landfill at Eastern Creek, the existing Genesis Alexandria Transfer Station, and a proposed C&I processing facility at the Genesis MPC.

The Applicant is seeking air emission limits that align with the Industrial Emissions Directive (IED) limits set by the European Union (EU). These are more stringent than the Group 6 emission standards in the *Protection of the Environment Operations (Clean Air) Regulation 2010* (POEO (Clean Air) Regulation) and are considered international best practice for energy from waste facilities. The proposed flue gas treatment system is designed to meet the IED limits.

The Applicant's appointed technology provider, Hitachi Zosen Inova (HZI), is a Swiss company that has delivered over 600 energy from waste projects worldwide. Approximately 30 of these are currently operating in Europe under the requirements of the EU IED, primarily thermally treating fuel derived from Municipal Solid Waste (MSW) and C&I sources.

Site Context

The undeveloped 'greenfield' site forms part of the Western Sydney Employment Area (WSEA). It is located approximately 14 kilometres (km) north-east of the new Western Sydney Airport at Badgerys Creek and approximately 36 km west of the Sydney central business district. Land uses immediately surrounding the site consist primarily of undeveloped or partly developed industrial land.

The closest residential areas are located in the suburbs of Minchinbury and Erskine Park, approximately one km to the north and west, respectively. There are approximately 4,945 residential properties, six schools and six childcare centres within three kms of the site. The closest residential properties are located approximately 900 metres (m) to the west of the site on Swamphen Street and Blackbird Glen in the suburb of Erskine Park.

Strategic Context

There are a number of waste management strategies and needs assessments relevant to consideration of the development application. A number of these studies assess the broader NSW waste management framework, including the WARR Strategy 2014-21 and the draft Waste and Resource Recovery Infrastructure Strategy 2017-2021. These strategies support the use of energy recovery to achieve State targets for the diversion of waste from landfill but only where it has community acceptance.

The public submissions and ongoing opposition to the proposed development demonstrate the Applicant has not gained the community's acceptance of the proposal. Furthermore, the draft Waste and Resource Recovery Infrastructure Strategy 2017-2021 identifies a shortfall in energy recovery waste management infrastructure for approximately 234,000 tpa of residual waste in the Sydney region. This represents only 42% of the total volume of waste proposed for the facility at Eastern Creek, which indicates the scale of the facility is likely to be significantly larger than required.

Other strategies specifically address Western Sydney's waste management infrastructure needs, including the Western Sydney Waste Avoidance and Resource Recovery Strategy 2011-2017 and the Western Sydney Regional Waste and Recycling Infrastructure Needs Assessment, both prepared by Western Sydney Regional Organisation of Councils (WSROC). These reports concluded the Sydney Metropolitan Area could accommodate up to four energy recovery facilities, with the emphasis of these facilities on processing residual waste from mixed waste (putrescible) treatment facilities and lifting overall resource recovery. The Applicant's proposed development is specifically identified as proposing more capacity than required and may therefore utilise material that could otherwise be recovered. The Department's assessment has found the proposal is likely to result in the diversion of waste currently being recycled to energy recovery, which directly contravenes the EfW Policy.

The Department considers the proposed development inconsistent with both the local and State-wide strategies and needs assessments in terms of the type of proposed waste feedstock and its proposed scale.

Consent Authority

The development is State significant development pursuant to Section 4.36 of the EP&A Act as it involves development with a Capital Investment Value of more than $30 million for the purposes of electricity generating works which meets the criteria in Clause 20 of Schedule 1 in *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). The Independent Planning Commission (Commission) is designated as the consent authority for the development as:

- Council has made an objection
- a political disclosure statement has been made
- there are more than 25 public submissions by way of objection.

Assessment Process and Consultation

After a number of revisions to the Environmental Impact Statement (EIS), the Department accepted the EIS and publicly exhibited the document from 27 May 2015 to 27 July 2015. A total of 44 submissions were received during the exhibition period, including 29 objections from the general public, local businesses and special interest groups. Council, the EPA and NSW Health objected to the proposed development.

Council considered the Applicant's EIS was seriously deficient in critical information on many of the key assessment issues. The EPA had significant concerns in relation to human health risk, alignment with the EfW Policy, air quality impacts and technological aspects of the proposal. NSW Health raised concerns about the potential unknown impacts to human health.

In response, the Applicant lodged an Amended EIS in late 2016, reducing the scale of the facility to a capacity of 1.105 million tonnes of residual waste fuel per annum, to be implemented in two stages comprising 552,500 tpa for each stage.

The Department publicly exhibited the Amended EIS from 9 December 2016 until 1 March 2017. In contrast to the original EIS, the Amended EIS generated a significant amount of community concern and attention with a total of 990 submissions received on the proposed development during the exhibition period. This included 963 public objections and strong letters of objection from Council, Penrith City Council, NSW Health and the EPA. The local Member for Mount Druitt, Mr Edmund Atalla, and the three local members for the Federal electorates in Western Sydney (McMahon, Chifley and Lindsay) also objected.

Key concerns raised by the EPA included potential air quality and human health impacts and alignment with the EfW Policy. NSW Health remained concerned about the potential health risks.

The Department's independent experts identified a number of key technical queries regarding the human health risk assessment and technological aspects of the proposal that they considered were fundamental to determine the predicted risks to human health and to completing a thorough assessment of the proposed facility against the EfW Policy.

In response to the issues raised, the Applicant lodged a Response to Submissions (RTS) report in December 2017. The report was made publicly available on the Department's major projects website and was referred out to key government authorities and the independent experts for final comment.

Council, Penrith City Council and NSW Health maintained their objection to the proposed development. The EPA maintained its view the proposal was inconsistent with the EfW Policy.

In February 2018, two petitions with over 10,000 signatures opposing the proposed development were tabled in NSW State Parliament. The key concerns raised related to the potential impacts on air quality, human health and the suitability of the site given the existing poor air quality in Western Sydney and its proximity to densely populated residential areas.

The Department acknowledges that while there are a few members of the community that support the proposal, the consultation and engagement undertaken by the Department and the local councils and the petitions tabled in Parliament, indicate a local community largely united in its opposition to the proposed development. This demonstrates the Applicant has not been able to obtain the community's acceptance of the proposal.

Key Issues

The need for consistency with the EfW Policy was identified early in the assessment process as a key requirement. The Department provided considerable opportunity for the Applicant to address the concerns raised by ARUP, the EPA and other submissions through the Amended EIS and the further amended application described in the RTS. The Department acknowledges the Applicant has progressively provided some of the additional information requested, however, the EPA and ARUP remain concerned the proposal is inconsistent with several key requirements of the EfW Policy.

One key requirement of the EfW Policy is for energy recovery facilities to use proven technologies that are well understood and capable of handling the expected variability and type of waste feedstock. This must be demonstrated through reference to fully operational plants using the same technologies and treating like waste streams in other similar jurisdictions. This is known as a 'reference facility'. Based on the advice from EPA and ARUP, the Applicant's nominated reference facility, Ferrybridge Multifuel 1 in West Yorkshire in the UK, is not an appropriate reference facility as it is not thermally treating the same types of wastes as the proposed development.

Without reference to a fully operational facility thermally treating the same waste feedstock, there is no certainty regarding the concentration and mix of pollutants in the emissions. As such, the air quality impacts and health risk estimates are unknown. The Department cannot be confident in the performance of the facility and if the IED emission limits would be met. Given the proximity of the proposed development to a

densely populated urban area and sensitive receivers such as schools and childcare facilities, the Department recommends a precautionary approach in this instance.

Furthermore, the Applicant has not adequately demonstrated how wastes that have the potential to generate harmful toxins will be excluded from the waste stream. The Applicant also proposes to include potentially hazardous wastes (floc waste) as part of the design fuel, which are not permitted to be used for energy recovery under the EfW Policy.

The Applicant's assessment does not provide assurances that the appropriate types of waste would be available for the proposed facility and higher order waste management opportunities (reduce, re-use, recycle), enshrined in the WARR Act and WARR Strategy, would be maximised. This directly contravenes the EfW Policy.

While the NSW Government supports the development of the energy from waste industry in NSW and has provided a framework for the development of this industry through the EfW Policy, the EP&A Act provides a merit-based approach to consider the impacts of developments against applicable statutory and policy requirements. The Department, EPA and the independent experts are not satisfied the requirements of the EfW Policy have been met for this proposal.

The public submissions demonstrate the community of Western Sydney consider there is insufficient justification for an energy from waste facility of this scale in this location and the proposal is not in their interest. Furthermore, the proposal has been opposed by the community's own Council, the local Members of Parliament representing the Federal electorates of Western Sydney, the local Members for the State electorates of Blacktown and Mt Druitt, the local primary school and other local special interest groups and businesses.

The Department notes the EfW Policy requires genuine dialogue with the community and states energy from waste is an appropriate pathway when community acceptance to operate such a process has been obtained. Based on the consideration of the nature and extent of submissions, the key issues raised and the concerns raised about the Applicant's consultation, the Department does not consider the Applicant has entered into a genuine dialogue with the community and has not gained their acceptance of the proposal.

Summary

The Department's assessment of the proposed energy from waste facility at Eastern Creek has considered the objects of the EP&A Act and the matters to be considered by a consent authority listed in Section 4.15 of the EP&A Act. The assessment has involved consideration of:

- all assessment information provided by the Applicant
- the benefits of the proposal
- submissions from the public, special interest groups and government authorities
- advice from the two independent experts, ARUP and EnRisks
- the relevant State policies, strategies and plans
- the current need for waste management infrastructure in the Sydney region.

The Department's assessment involved considerable consultation with the Applicant and the community, including evaluation of two amendments to the development application and multiple revisions to the supporting technical reports. In this case, the Department considers that the changes to the development described in the RTS have gone some way towards reducing the impacts of the development. However, despite the application amendments, the Department, its independent experts and several key government authorities remain dissatisfied with the Applicant's justification for the proposal, the validity of the conclusions and that the requirements of the EfW Policy have been met.

The proposed development is located in an area surrounded by densely populated residential areas and numerous schools and childcare facilities. Development adjacent to these land uses must achieve a high level of environmental protection. The use of the site for a large-scale energy from waste facility within 900m of residential properties, childcare facilities and schools, with an unknown emission profile and uncertain long-term human health risks is not appropriate.

The Department's assessment concludes:

- the proposal is inconsistent with the EfW Policy which presents uncertainty around the performance of the facility and the long-term risks to the environment and the health of the local community

- the Applicant has not identified a suitable reference facility and therefore the expected air emissions from the proposed design fuel are unknown
- given the uncertainties described above, the location of the proposal in close proximity to densely populated residential areas, schools, childcare centres and employment areas in Western Sydney, is not suitable
- the proposed design fuel contains a significant portion of potentially hazardous waste streams which may result in harmful compounds, such as dioxins and furans, in the emissions
- the development is likely to use material for energy recovery instead of utilising this material to achieve higher order resource recovery outcomes, which is inconsistent with the principles of the WARR Act and the NSW EfW Policy
- the Applicant's assessment is likely to have overestimated the volume of residual waste available for energy recovery in the MLA and has therefore not adequately justified the scale of the proposed facility
- submissions on the development demonstrate there is significant opposition to the proposal
- the Applicant has been unable to gain the community's acceptance of the proposed development
- the proposal is inconsistent with a number of the relevant waste and resource recovery strategies with respect to its scale and proposed waste feedstock
- the development is not in the public interest as the public benefit of the proposed development does not outweigh the potential unacceptable impacts the proposed development may have on the surrounding local community now and into the future.

It is considered that these concerns and impacts cannot be appropriately dealt with by conditions of consent. The Department does not consider in this instance that the wider benefits of the proposal in terms of reducing the amount of waste to landfill and the creation of electricity outweigh short, medium and long-term impacts and risks associated with the proposal. This position is supported by NSW Health, Blacktown City Council and Penrith City Council, all of which have objected to the development.

On balance, the Department concludes the application is not consistent with the objects of the EP&A Act, is not in the public interest and should be refused.

1. BACKGROUND

1.1. The Department's Assessment

This report details the Department of Planning and Environment's assessment of the State significant development (SSD 6236) for the construction and operation of an energy from waste facility. The proposal involves the thermal treatment of up to 552,500 tonnes per annum (tpa) of waste that would otherwise go to landfill to produce 68.7 mega-watts of electricity (MWe) utilising steam driven turbines. The Department's assessment considers all documentation submitted by The Next Generation (NSW) Pty Ltd (the Applicant), including the Environmental Impact Statement (EIS), Amended EIS and Response to Submissions (RTS) report, and submissions received from government authorities, stakeholders, the public and advice from the Department's independent technical experts. The Department's assessment also considers the legislation and planning instruments relevant to the site and the development.

This report describes the proposed development, surrounding environment, relevant strategic and statutory planning provisions and the issues raised in submissions. The report evaluates the key issues associated with the development and provides a recommendation for determining the application.

Given the complexity of the proposal and being the first of its kind in New South Wales (NSW), the Department, in collaboration with the Environment Protection Authority (EPA), engaged two independent experts in the fields of human health risk assessment (Environmental Risk Sciences Pty Ltd) and international best practice waste to energy engineering (ARUP Pty Ltd), to assist in the assessment of the proposal. Environmental Risk Sciences Pty Ltd (EnRisks) is an Australian based risk assessment consultant with extensive experience in human health risk assessment. ARUP is an international engineering consultancy with extensive experience dealing with energy from waste facilities in Europe. These experts were engaged in November 2014, prior to lodgment of the EIS, and have continued to provide advice throughout the assessment of the application.

1.2. Development Background

The Next Generation (NSW) Pty Ltd (the Applicant) is seeking development consent to construct and operate an energy from waste facility at Eastern Creek in the Blacktown Local Government Area (LGA).

The facility proposes to use moving grate incinerator technology fed by two waste combustion lines to thermally treat up to 552,500 tpa (276,250 tpa per combustion line) of residual waste fuel. The proposed facility would include two independent boilers, two flue gas treatment systems, a twin flue emission stack, one turbine, an air-cooled condenser and all other auxiliary equipment. Other key infrastructure includes a tipping hall, waste bunker, administration building and workshop, as well as underground infrastructure, substation, detention basins and back-up systems. The facility would operate 24 hours a day, seven days a week with a two-week shutdown period for maintenance.

Up to 552,500 tpa of waste would be thermally treated to produce a total of 76 MWe. Up to 68.7 megawatts (MW) could be exported to the national grid and the remaining 7.3 MW would be reserved for operational purposes on the site. The proposal would provide electricity for up to 100,000 homes.

The facility would be co-located with the existing Genesis Xero Waste Recycling Centre, Materials Processing Centre (MPC) and landfill, which are operated by a related company, Dial A Dump (EC) Pty Ltd and operates under an existing project approval granted in 2009 by the then Minister for Planning.

The proposed waste fuel would be sourced from existing and planned facilities under the Applicant's control, including the existing Genesis facilities at Eastern Creek, the existing Genesis Alexandria Transfer Station, and a proposed commercial and industrial (C&I) 'dirty MRF'[1] at the existing Genesis MPC.

1.3. Site Description

The site forms part of the Western Sydney Employment Area under State Environmental Planning Policy (Western Sydney Employment Area) 2009. It is located approximately 14 kilometres (km) north-east of the new Western Sydney Airport at Badgerys Creek and approximately 36 km west of the Sydney central business district (see **Figure 1**).

[1] A 'dirty MRF' is a mixed-waste processing system that accepts a mixed solid waste stream and then proceeds to separate out designated recyclable materials through a combination of manual and mechanical sorting.

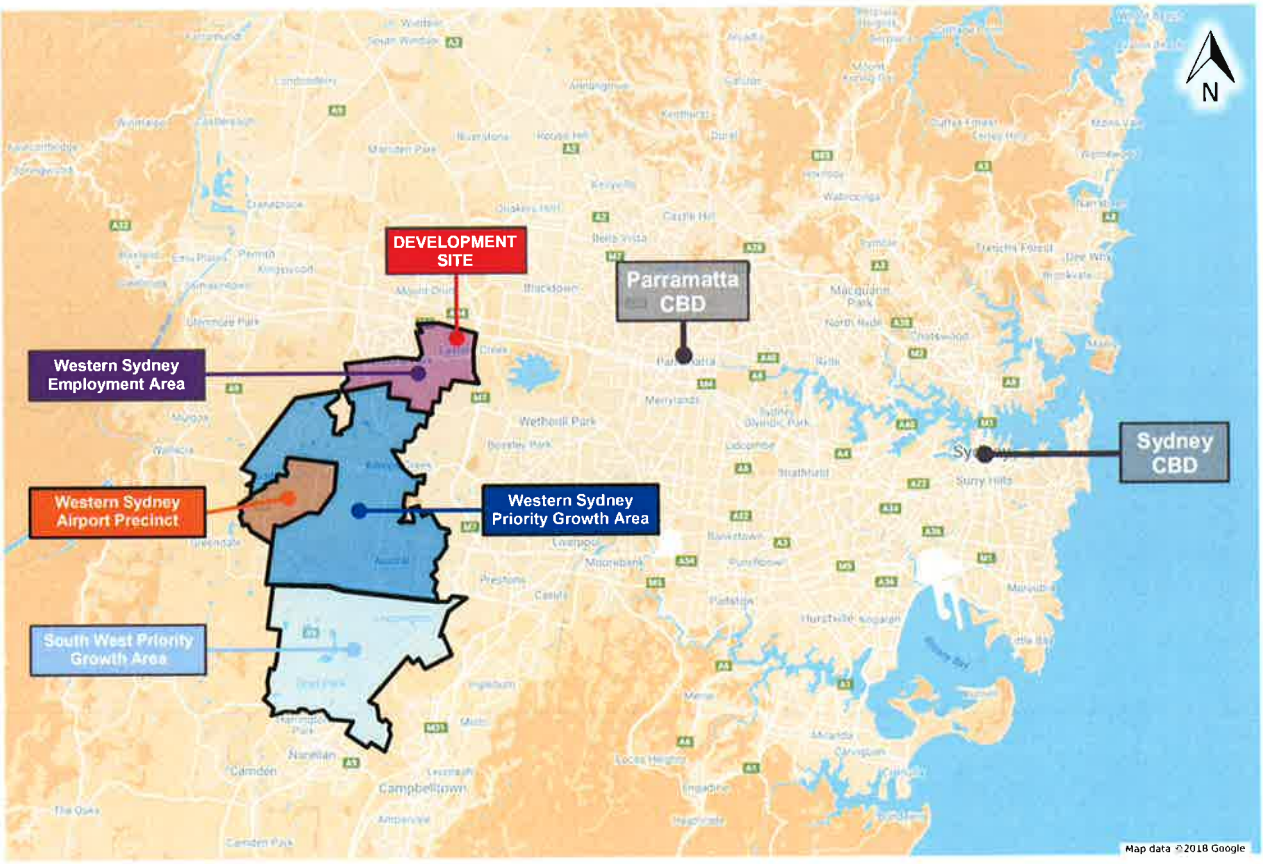

***Figure 1**: Site Location*

The development site forms part of a larger landholding owned by the Applicant, known as the 'broader site', located at Honeycomb Drive, Eastern Creek. The broader site contains the existing Genesis Xero Waste facility and landfill and comprises four lots across 85.85 hectares (ha) of IN1 General Industrial zoned land under *State Environmental Planning Policy (Western Sydney Employment Area) 2009*. The broader site is legally described as Lots 1, 2 and 3 in DP 1145805 and Lot 8 in DP 1200048.

The development footprint for the proposed energy from waste facility covers an area of approximately 20 ha and would be sited on Part Lot 1, Part Lot 2 and a small area (approximately 0.4 ha) located on Lot 3.

The development site is an undeveloped 'greenfield' site, primarily containing couch grass previously used as grazing pasture land, and small areas of Cumberland Plain Woodland and River-Flat Eucalypt Forest in the south-east corner of the site. Both vegetation communities are listed endangered ecological communities (EECs) under the *NSW Threatened Species Conservation Act 1995*. The Woodland community is also listed as a nationally critically endangered ecological community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The site generally falls from the north-east corner at RL 78.99 down to the south-west corner at RL 54.2 adjacent to a tributary of Ropes Creek. This tributary drains to the west of the site and connects into Ropes Creek.

1.4. Surrounding Land Uses

Land uses immediately surrounding the site consist primarily of undeveloped or partly developed industrial land, with the closest residential properties located in the areas of Minchinbury and Erskine Park, approximately one km to the north and west, respectively. There are approximately 4,945 residential properties, six schools and six childcare centres within three km of the site. The closest residential properties are located approximately 900 m to the west of the site on Swamphen Street and Blackbird Glen in Erskine Park. The Prospect Reservoir is located approximately five km to the south east of the development site (see **Figure 2** for site context).

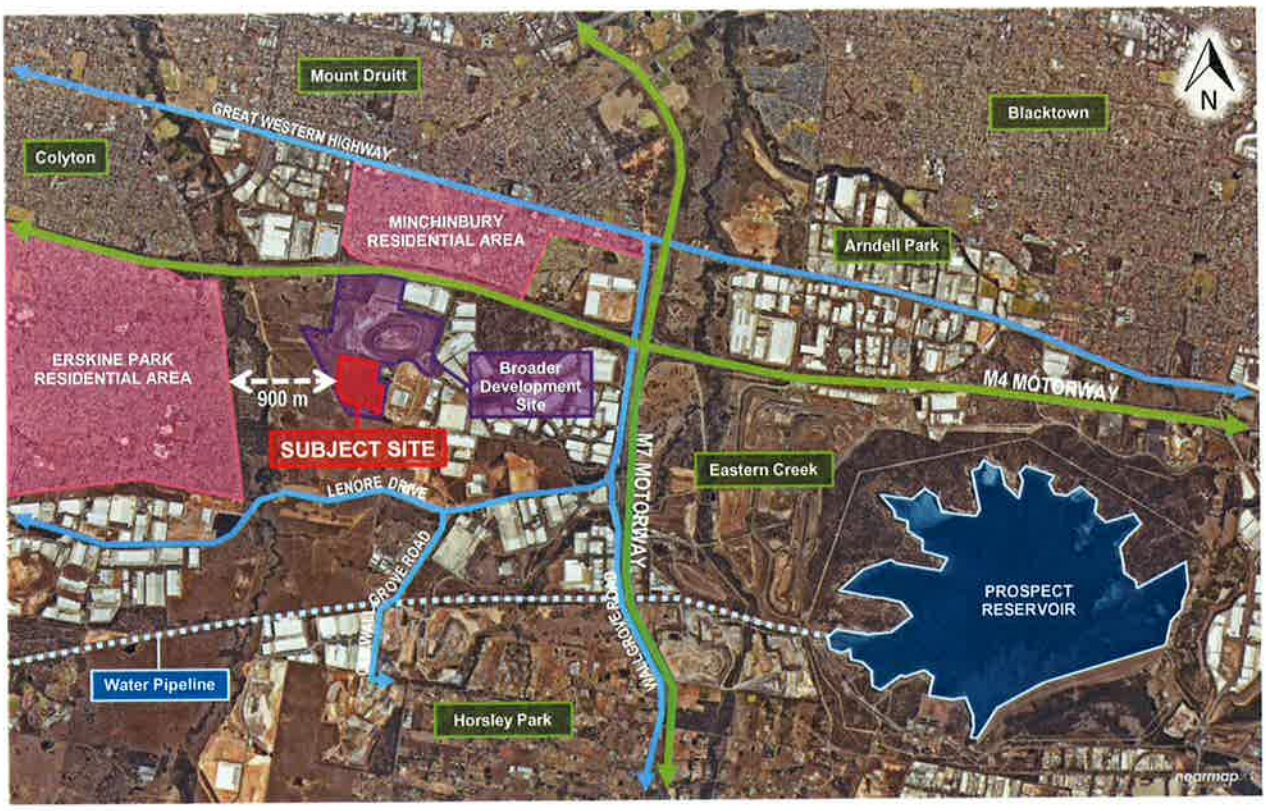

Figure 2: *Site Context*

A 132 kilovolt (kV) electricity transmission line traverses the land immediately to the west. Vacant industrial land adjoins to the south and north-east. This land is identified for industrial and employment uses, notably land owned by Hanson, Jacfin and Sargents. There is an asphalt plant adjoining the site to the east (refer to **Figure 3**).

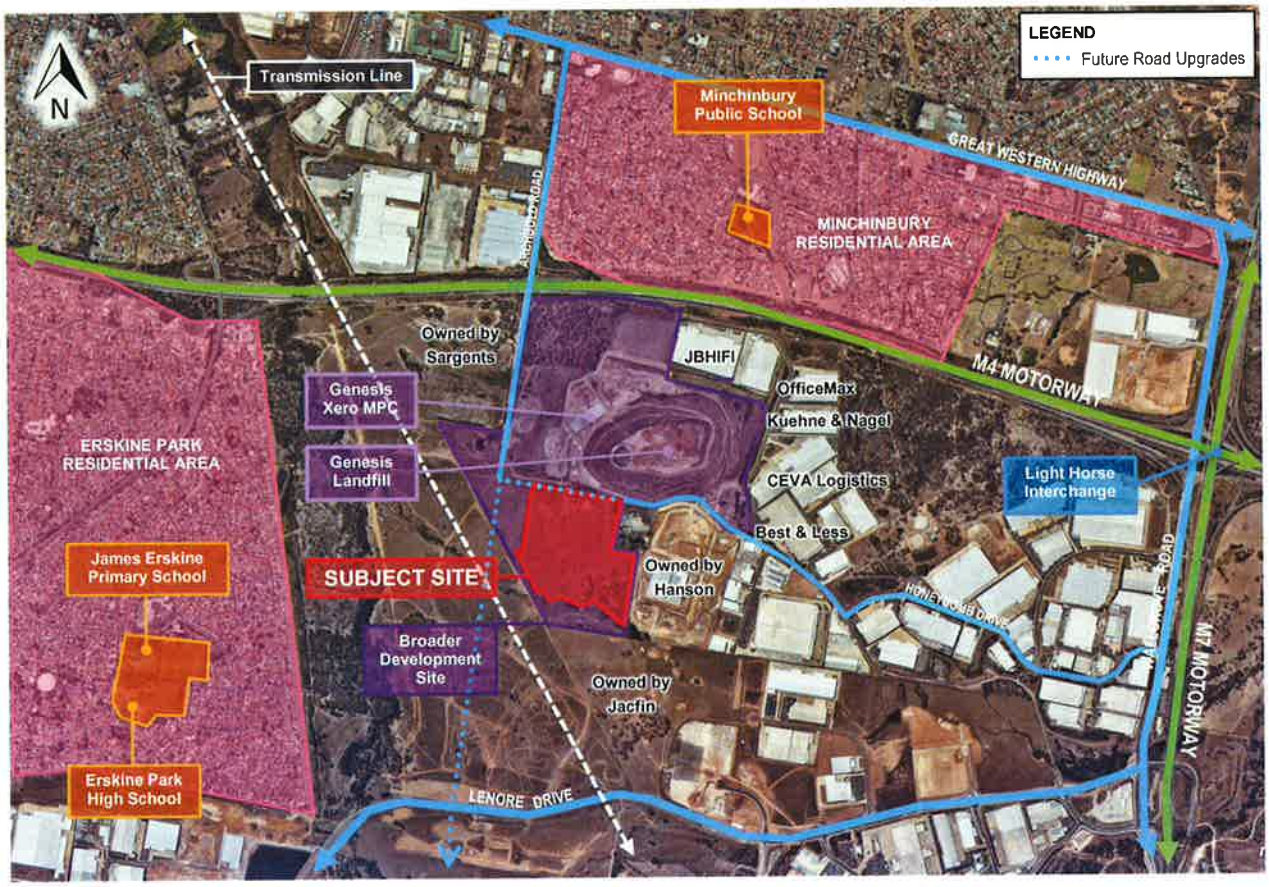

Figure 3: *Surrounding Land Uses*

The WSEA is identified as strategic employment lands, and therefore coordinated development of the area is occurring. Recent approved developments within the Eastern Creek and Erskine Park Precincts of the WSEA include high employment generating uses such as warehousing, distribution and freight logistics centres. In the Eastern Creek Precinct, developments include the JB Hi-Fi Warehouse and Distribution Centre, OfficeMax Warehouse, Best and Less Warehouse and Distribution Centre and global logistics companies such as Kuehne & Nagel and Ceva Logistics.

Road access to the site is from Honeycomb Drive, which connects to Wonderland Drive and then Wallgrove Road before joining the M7 Motorway about one kilometre south of the Lighthorse Interchange. Key access roads servicing the development from Honeycomb Drive include the M7 Motorway, M4 Motorway, Wallgrove Road and Wonderland Drive. Archbold Road, a local road that runs in a north-south direction to the west of the site, is proposed to be upgraded, with a new connection to Honeycomb Drive facilitating east-west connectivity in this part of the WSEA.

1.5. Related Development Approvals

The existing Genesis Xero Waste MPC, recycling centre and landfill were granted approval by the then Minister for Planning in November 2009 and commenced operation in June 2012 (MP 06_0139). The facility operates under an Environment Protection Licence (EPL 20121) issued by the Environment Protection Authority (EPA). One of the largest of its kind in the southern hemisphere, the facility has approval to:

- accept up to two million tpa of construction and demolition (C&D) and C&I waste
- landfill up to 700,000 tpa of non-putrescible waste and asbestos
- stockpile up to 50 tonnes of waste tyres
- stockpile up to 20,000 tonnes of green waste.

Currently, the Genesis facility primarily accepts C&D waste for processing into recycled building materials and minimal volumes of C&I waste. The landfill accepts C&D waste that cannot be recycled (including asbestos), and the residue material from the Genesis MPC and other recycling facilities.

Incoming waste material that is residue from other recycling facilities and the residue material from the Genesis facility is directed to the landfill via a large conveyor and chute reaching into the quarry void. This chute material is proposed to be diverted to the proposed energy from waste facility.

The Genesis project approval has been modified on five occasions, with the most recent modification approved in March 2016. The first four modifications relate primarily to construction and reconfiguration of site infrastructure to improve operations and an increase in the hours of operation for the MPC. Most recently, in March 2016, the former Planning Assessment Commission granted approval to construct a pre-sort enclosure adjoining the existing MPC to improve the efficiency of the existing facility and provide a dedicated area for the pre-sorting of C&I waste materials. Two further modifications are currently under consideration by the Department to:

- increase the MPC hours of operation for the landfill, allow the MPC to operate 24 hours a day and modify the annual landfill cap (MOD 6)
- modify the entry point and layout of site operations to facilitate delivery of the Precinct Road (MOD 7).

1.6. International and National Waste to Energy Experience

Energy from waste technology is new to Australia and the proposed development at Eastern Creek as a purpose-built energy from waste facility, is the first of its kind in NSW. There is a growing industry and market in NSW for the production and use of Processed Engineered Fuel (PEF) / refuse derived fuel[2] (RDF) to divert waste from landfill and to reduce reliance on fossil fuels. For example, in October 2016, the Boral Cement facility in Berrima was approved to use up to 100,000 tpa of RDF from commercial, industrial and demolition waste sources in its cement kiln, but only as an alternate fuel source to supplement the use of coal.

Two Sydney-based resource recovery facilities have also recently been granted approval to produce PEF/RDF, namely the Global Renewables Eastern Creek Waste Management Centre (UR3R Facility) (DA 323-11-4001i MOD 6) and the ResourceCo Pty Ltd Waste and Resource Management Facility (WRMF) at Wetherill Park (SSD 7256). These facilities have consent to produce 65,000 tpa and 150,000 tpa of PEF/RDF, respectively.

[2] Refuse derived fuel (RDF) generally consists of the dry calorific fractions derived from residual non-hazardous waste sources including MSW, C&I waste and C&D waste. Materials usually include plastics, timber, paper and cardboard, rubber and textiles. In the UK, it is typically sourced from MSW and C&I sources.

Waste to energy is used globally to generate energy from the thermal treatment of waste. There are over 2,000 energy from waste plants operating globally, with around 80 facilities operating in the United States, over 1,000 in Japan (21 in Tokyo alone) and over 400 facilities throughout Europe. In Paris alone, there are three energy from waste plants with treatment capacities ranging from 460,000 tpa to 700,000 tpa of household, non-recyclable residual waste.

The Applicant's appointed technology provider for the facility, Hitachi Zosen Inova (HZI), is a Swiss company that describes itself as a 'global technology leader for energy and material recovery from Municipal Solid Waste (MSW), refuse derived fuel (RDF) and organic waste'. HZI has delivered over 600 energy from waste projects worldwide. Approximately 30 of these are currently operating in Europe under the requirements of the European Union (EU) Industrial Emissions Directive (IED), primarily thermally treating residual waste fuel derived from MSW and C&I sources.

Four energy from waste facilities have been approved in Western Australia (WA) to thermally treat a range of residual waste fuels. These are located in Port Hedland, East Rockingham, Kwinana and Hazelmere. To date, none of these facilities have been constructed. A summary of these WA facilities as compared to the proposed development at Eastern Creek is provided in **Table 1** below.

Table 1: *Western Australian Energy from Waste Facilities*

Applicant	Location	Estimated Cost ($ million)	Waste Volume (tpa)	Residual Waste Design fuel	Energy Outputs (MW)	Date Approved
Phoenix Energy	Kwinana	$380 M	400,000	MSW, MRF[1], AWT[2]	32	2015
New Energy	East Rockingham (Perth Metro)	$160 M	225,000	MSW, C&D, C&I, green waste, MRF	16	2015
New Energy	Port Hedland (West Perth)	$180 M	225,000	MSW, C&D, C&I, green waste	15	2013
Eastern Metropolitan Regional Council	Hazelmere	$25 M	13,000	Wood waste	3	2016
The Next Generation	Eastern Creek (NSW)	$334 M	552,500	C&D, C&I, MRF, Floc[3], CRW[4]	68	NA

Note: *1. Material recovery facility; 2. Alternative waste treatment; 3. Floc waste is the residue from the shredding of car and metal recyclables; 4. Chute residual waste*

The WA Environmental Protection Authority is currently considering a modification to the East Rockingham facility to increase the capacity of this facility from the thermal treatment of 225,000 tpa to 330,000 tpa of residual MSW, C&I and C&D waste fuel to produce up to 28.2 MW of electricity. The proposed technology provider is HZI, the same technology provider for Applicant's proposal.

2. PROPOSED DEVELOPMENT

2.1. Proposal Amendments

The original application, lodged and publicly exhibited in 2015, sought approval for a large-scale facility with a capacity to thermally treat up to 1.35 million tonnes of residual waste per year. Following the Applicant's review of issues raised in submissions on the original EIS and significant concerns raised by the Department, its experts and key government authorities, the Applicant lodged an Amended Environmental Impact Statement (EIS) for consideration and public exhibition in December 2016. The Amended EIS reduced the scale of the facility to thermally treat up to a maximum of 1.105 million tonnes of residual waste fuel per annum, to be implemented in two stages comprising 552,500 tpa for each stage.

In response to significant public opposition to the proposal as presented in the Amended EIS and concerns raised by government authorities, the Department and its experts, the Applicant again amended the proposal as part of a Response to Submissions (RTS) report. It is this further amended proposal that is described below and the development assessed in this report. A detailed project chronology is provided in **Figure 4** below.

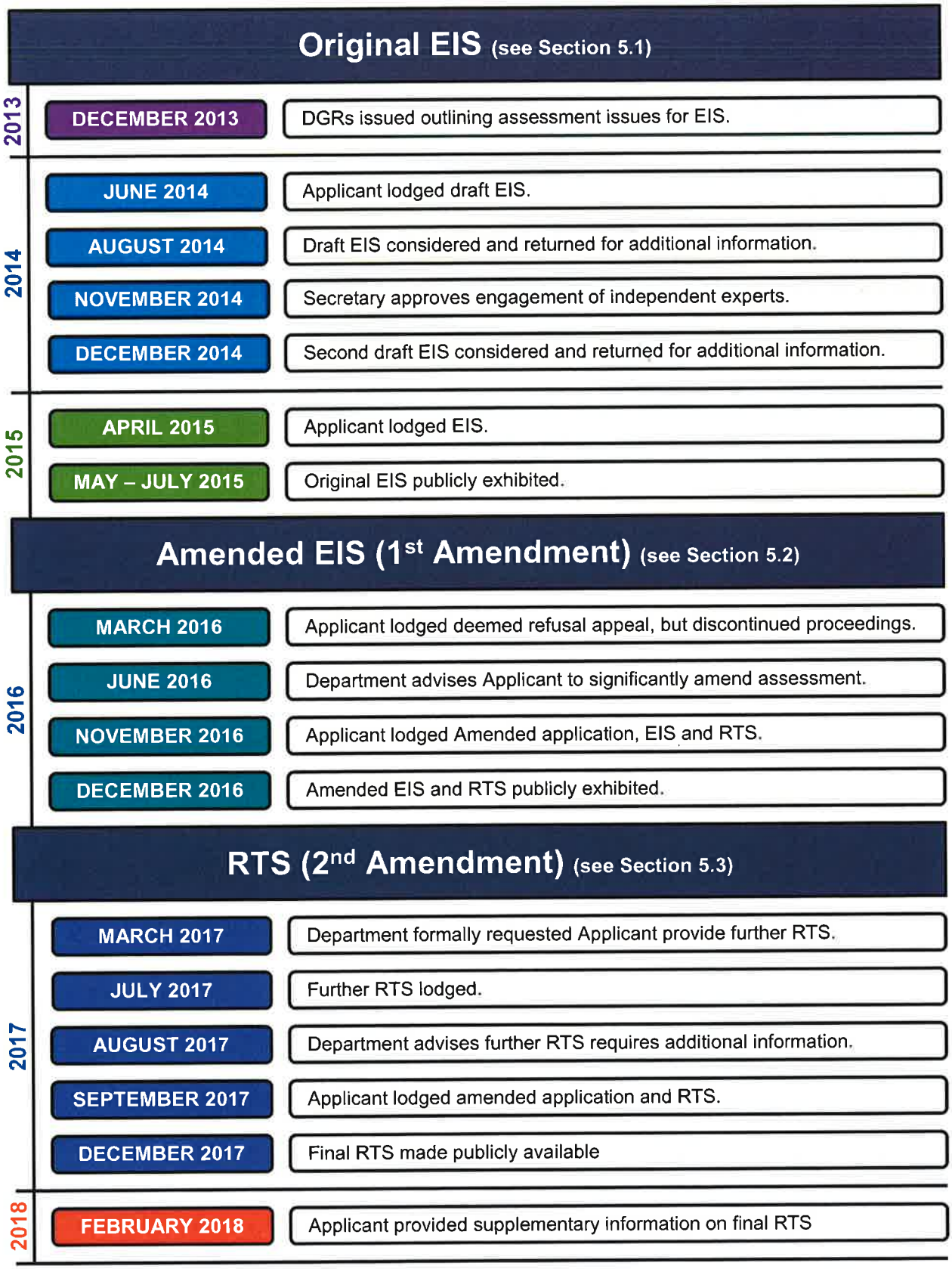

Figure 4: *Project chronology*

The two amendments to the DA were made under clause 55 of the *Environmental Planning and Assessment Regulation (EP&A Regulation)* with the agreement of the Director, Industry Assessments, in accordance with the Minister's delegation dated 20 June 2016. A summary of the amendments made to the proposal during the assessment of the application are outlined below.

Component	Original EIS	Amended EIS	RTS
Processing volume (per annum)	1.35 million tonnes	1.105 million tonnes	552,500 tonnes
Staging	Two stages: Stage 1: 552,500 tpa Stage 2: not stated	Two stages: Stage 1: 552,500 tpa Stage 2: 552,500 tpa	One stage only: Stage 1: 552,500 tpa

2.2. Deemed Refusal

On 24 March 2016 the applicant lodged a 'deemed refusal' appeal in the Land and Environment Court. The Department considered that the appeal was out of time, and the applicant later discontinued the appeal.

2.3. Description of the Development

The Applicant proposes to construct and operate an energy from waste facility on Honeycomb Drive in Eastern Creek. The major components of the proposed development are summarised in **Table 2**, shown in **Figures 5 – 8** and described in full in the RTS, included in **Appendix G**.

Table 2: *Main Development Components*

Aspect	Description
Development Summary	**Energy from waste facility with a capacity to thermally treat up to a maximum of 552,500 tpa of residual waste fuel and generate up to 68.7 MWe (549,200 MWh)**
Development footprint	Development footprint of around 20 hectares
Earthworks and civil works	Site preparation, bulk earthworks, piling and foundations, services location and reticulation, road works, car parking
Construction	Two broad phases of construction work over three years • Stage 1: Construction and enabling works a) Site establishment and clearance – 2 months b) Bulk earthworks, services lead-in works and road works – 6-10 months • Stage 2: Main construction work a) Structure and concrete works – 5 months b) Technology provide plant installation – 16-18 months c) Structural steel works – 4-6 months d) Façade / roofing – 4 months e) Fit out and landscaping – 5 months
Key plant and systems	• Tipping hall, waste bunker, boiler house with two independent boilers, turbine hall with one steam driven turbine and an air-cooled condenser, two flue gas treatment systems • Two combustion lines each with a capacity to carry up to 276,250 tpa of waste fuel • 100 m high 3.1 m diameter emission stack with two inner flues
Supporting auxiliary plant	• Two emergency diesel generators, control room, workshop, offices and amenities • Five laydown areas with a total footprint of 8.3 ha
Technology	• Moving grate system with water and air-cooled grate bars
Emissions limits	• Designed to achieve the European Industrial Emissions Directive emissions limits and thereby comply with the Group 6 emission limits in the *Protection of the Environment Operations (Clean Air Regulations 2010*
Flue gas treatment system	• Controls emissions of acid gases, particulates, dioxins and furans and heavy metals • Selective non-catalytic reduction (SNCR) technology to remove Nitrogen Oxides (NOx) • Semi-dry system for removal acidic gaseous contaminants with hydrated lime • Activated carbon reactor for removal of heavy metals and organic contaminants • Fabric filter for removal of particulates
Waste streams	• Chute residual waste (CRW) • Material recovery facility (MRF) waste from qualified resource recovery facilities • Floc waste from car and metal shredding and resource recovery • Mixed C&I residual • Other specified waste fractions (SWF)
Traffic	Construction • 112 heavy vehicle movements per day and up to 154 at the commencement of plant installation works (end of Stage 1) and the completion of civil and structural works

Aspect	Description
	Operation • 307 vehicle movements per day comprising 55 light vehicles and 252 heavy vehicles movements per day
Road and intersection works	• New sealed Estate Road to provide access to the site from Honeycomb Drive • Underpass beneath new Estate Road to provide direct access between the existing MPC and the proposed facility
Hours of operation	24 hours, 7 days
Subdivision	Reconfiguration of existing Lots 1, 2 and 3 in DP 1145805
Capital investment value	$334 million
Employment	500 full-time equivalent construction jobs and 55 operational jobs.
Voluntary Planning Agreement	A VPA is proposed to be entered into by the Applicant with the Minister for the purpose of guaranteeing the collection of **$3,048,193** in contributions to ensure the delivery of regional transport infrastructure and services in accordance with clause 29 of the WSEA SEPP

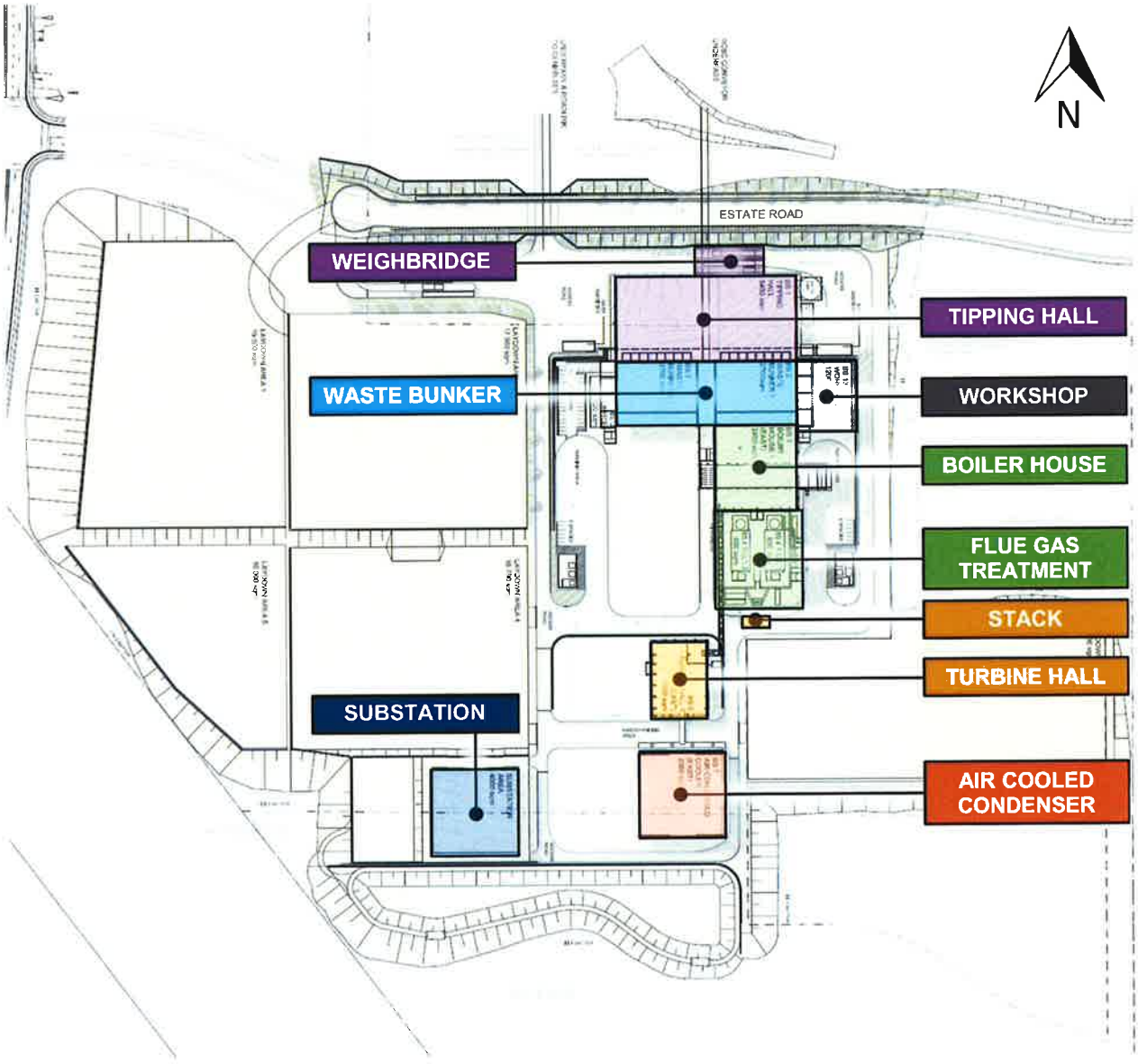

Figure 5: *Proposed Development Layout*

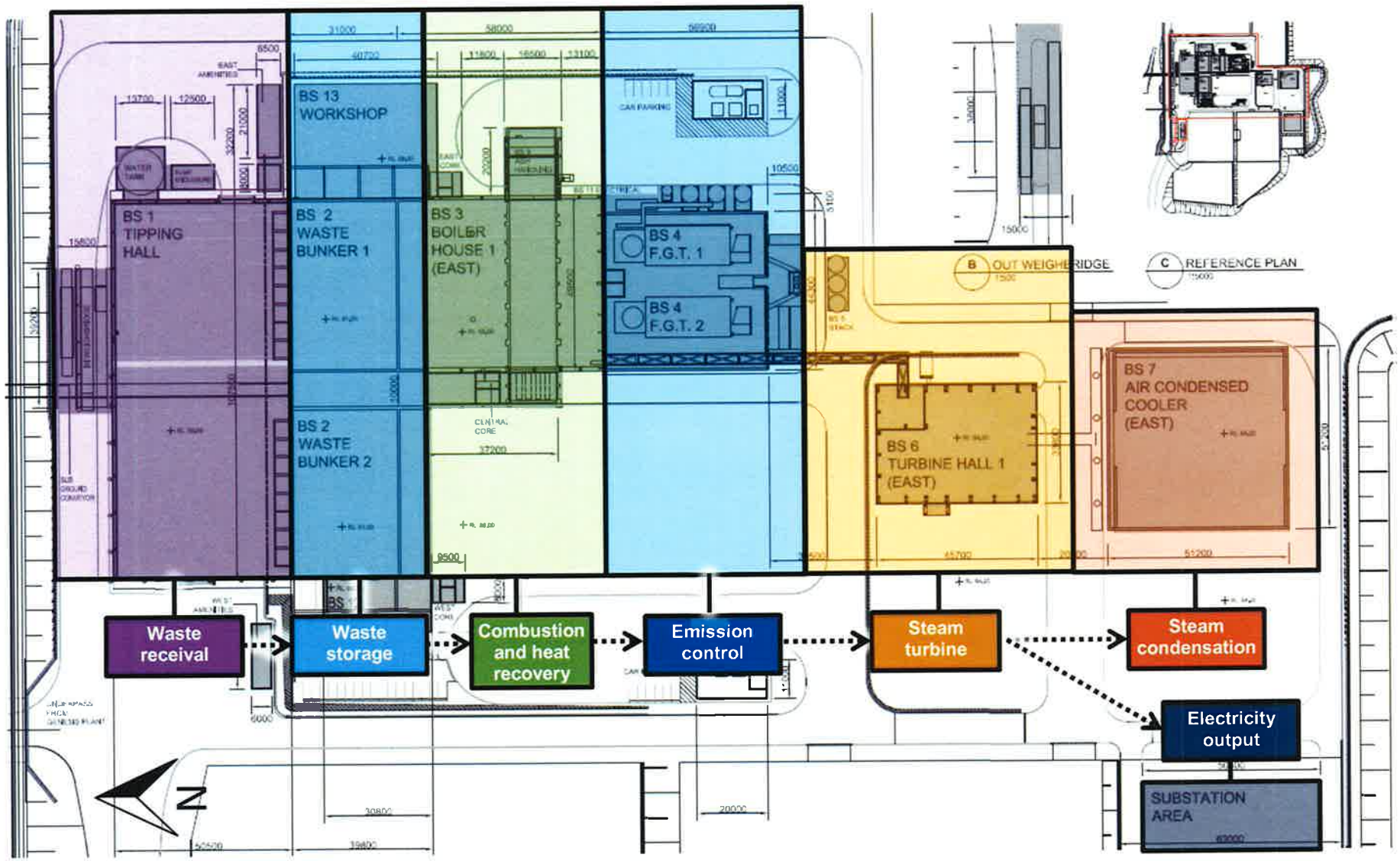

Figure 6: *Proposed Site Plan*

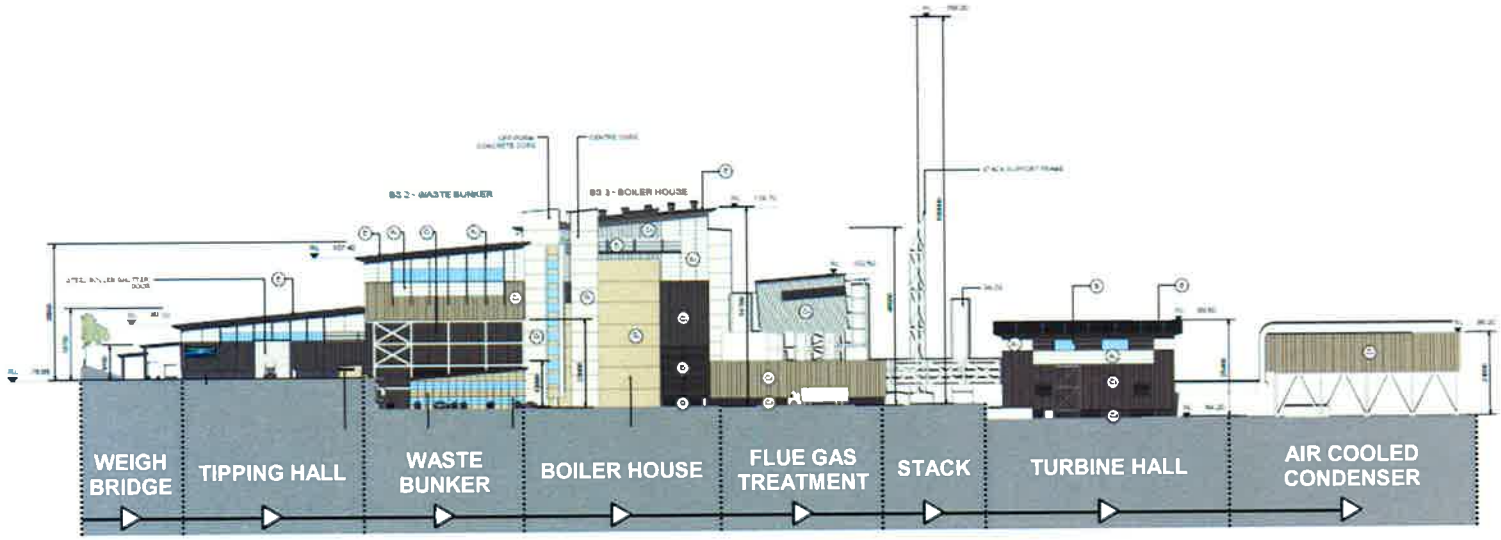

Figure 7: *West Elevation*

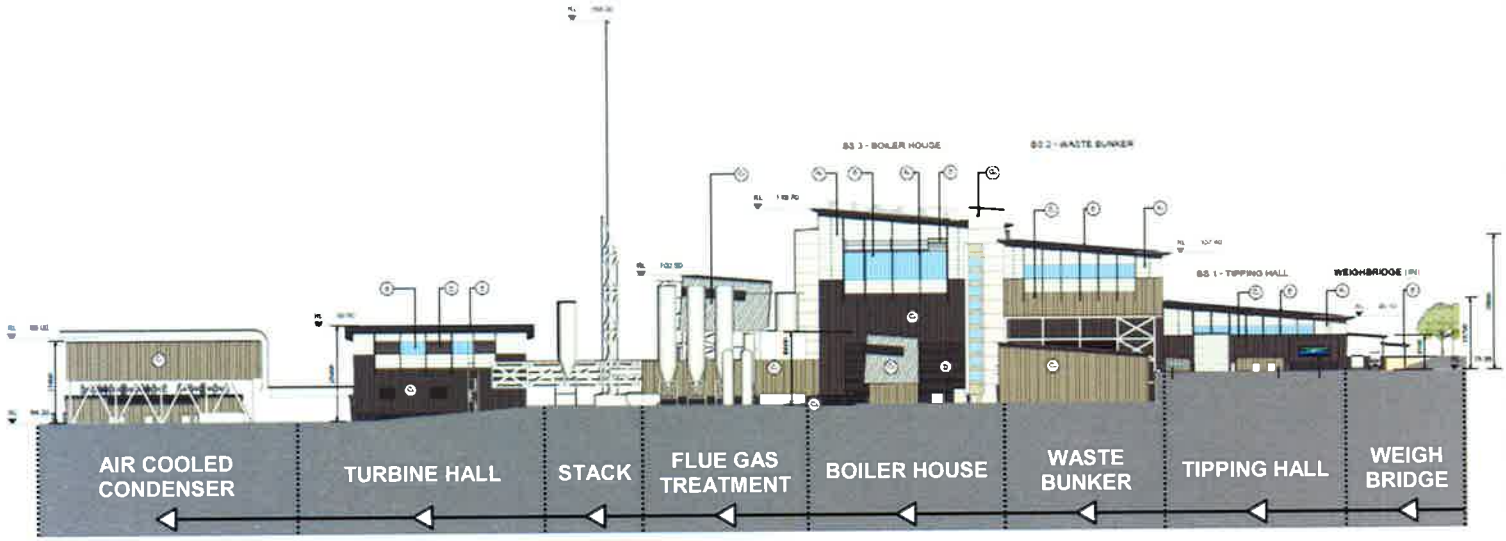

Figure 8: *East Elevation*

Waste Source, Availability and Composition

The Applicant proposes to source residual waste from existing and proposed facilities under the control of Genesis and Dial-a-Dump Industries. The Applicant's estimation of the total eligible tonnes of waste available for use in the facility as set out in **Table 3** and **Table 4** below.

Table 3: *Waste Source Availability: Existing Facilities*

Facility	Facility Type	Waste Characterisation	Activity undertaken	Eligible Tonnes (tpa)
Genesis EC* Recycling Centre	Recycling Centre	Wood and textiles	Recycling	751
Genesis EC MPC	Mechanical recycling plant	CRW	Recycling	41,978
Genesis EC Landfill	Landfill	MRF, Floc, wood and textiles	Landfill	120,954
Genesis Alexandria	Transfer station	CRW	Recycling	15,714
Subtotal				**179,397**

* Eastern Creek

Table 4: *Waste Source Availability: Planned Facilities*

Facility	Description of Expansion	Waste Characterisation	Additional Eligible Tonnes (tpa)
Genesis EC Recycling Centre	Increase receival of textiles and waste wood	Wood and textiles	67,559
Genesis EC MPC	Increase input stream by 210,700 tpa	CRW	52,262
Genesis EC Landfill	Increase receival of shredder floc	Floc	27,120
Commercial & Industrial Dirty MRF	Build approved processing facility for mixed C&I waste	C&I	226,162
Subtotal Planned Facilities			**373,103**
Subtotal Existing Facilities			**179,397**
GRAND TOTAL			**552,500**

Residual Waste Fuel from the Genesis MPC would arrive at the proposed Facility in three ways:

- a conveyor transport system which would carry the residual waste output of the Genesis MPC via a culvert under the Precinct Road and would eject directly into the waste storage bunker
- vehicle transport from Genesis MPC via the archway under the Precinct Road
- vehicle transport system via the culvert under the Precinct Road.

The proposed waste stream material composition is outlined in **Table 5**. This is based on typical values for each of the proposed fuels and an estimated fuel mix.

Table 5: *Proposed waste streams material composition*

CRW	MRF Waste	Floc Waste	Mixed C&I Waste	Specified Waste Fractions
19.90%	12.06%	14.73%	40.93%	12.37%

Emission Limits and Monitoring

The Applicant is seeking emission limits that align with the Industrial Emissions Directive (IED) limits set by the European Union (EU). These are more stringent than the Group 6 emission standards in the *Protection of the Environment Operations (Clean Air) Regulation 2010* (POEO (Clean Air) Regulation). The proposed flue gas treatment system would be designed to meet the in-stack concentration limits for waste incineration set by the IED.

The facility would utilise Continuous Emissions Monitoring System (CEMS) to provide the EPA with 24-hour real time feedback and emissions monitoring. Weekly reports would be available on the Applicant's website. The CEMS would monitor the emissions of the plant and trigger a shutdown in the event of any exceedance. The CEMS would monitor oxygen (O_2), carbon monoxide (CO), hydrogen chloride (HCl), sulphur dioxide (SO_2), nitrogen oxides (NO_x), ammonia (NH_3), Volatile Organic Compounds (VOCs), total particles and flue gas volume. Spot sampling would also be undertaken for nitrogen oxides (NO_x), heavy metals, mercury, cadmium, thallium and dioxins and furans at a frequency specified by the EPA.

Waste By-Products
Operation of the facility would generate bottom ash, boiler ash and air pollution control (APC) residue. Total volumes of waste products are outline below in **Table 6**. Ferrous materials is proposed to be removed from the bottom ash by means of magnetic separators, discharged into storage bins and then transported off site to a metal recycler. All bottom ash would be sent to the adjoining Genesis facility for disposal to landfill or other licensed facilities for aggregate and road base production.

Table 6: *Facility Waste By-Products*

Waste By-Product	Volume (tpa)	Destination
Bottom ash (wet)	146,583	Landfill
APC residue & Boiler ash	21,900	Authorised landfill only
TOTAL	**168,483**	

Due to the heavy metals involved in the flue gas treatment process, APC residue is classified as restricted solid waste. It would therefore be stored in dedicated enclosed silos located adjacent to the flue gas area before being transported via a sealed tanker to an appropriate offsite disposal facility.

Boiler ash would be conservatively disposed of with the APC residues, unless it can be proven to be reusable following rigorous testing procedures in compliance with EPA regulations.

Energy Recovery and Emergency Power
For the export of the 68.7 MW of electricity generated, the Applicant proposes a separate connection via a new substation to the electricity network.

The two emergency diesel generators would supply emergency power as required.

Quality Control
The Applicant proposes to implement quality control procedures in respect of the extent of the resource recovery required to have been carried out, consistent fuel quality and the exclusion of unacceptable materials from the fuel residue waste stream. A weighbridge operator would receive and process all vehicles entering the site. The quantity of incoming fuel would be checked with CCTV, electronically recorded and if necessary it would be sampled. Only authorised fuel would proceed to the fuel reception area.

Hazardous Waste
Asbestos, treated waste wood (TWW) and polyvinyl chloride (PVC) is not proposed to be accepted at the facility. If any asbestos is present in the residual waste stream the Applicant advises it would be identified during the quality assurance processes which includes visual inspection and sorting, separation and would then go to the Genesis landfill. Any third-party waste that is transported direct to the facility would be inspected at the weighbridge at which point the asbestos would be declared and the vehicle would be directed to the landfill. In the unlikely event asbestos enters the facility, the Applicant advises it would be fully removed and leave the plant either with the bottom ash or APC residues after it has been through the combustion process.

Shutdown
In the event of any exceedance of the specified emissions limits, the CEMS is proposed to trigger an automated shut-down of the facility over a period of four hours. This system would be fully interlocked to prevent manual intervention unless it is safe to do so. The Applicant advises the cumulative duration of operation in such conditions would not exceed a total of 60 hours in any one-year period.

2.4. Energy from Waste Process

Energy from waste involves collecting heat generated through the controlled combustion (by thermal treatment, pyrolysis[3] or gasification[4]) of residual waste material and using it for electricity generation. The waste to energy process is illustrated in **Figure 9** and described below.

[3] Pyrolysis is the thermal breakdown of waste in the absence of air, to produce char, pyrolysis oil and syngas (e.g. the conversion of wood into charcoal).
[4] Gasification is the thermal breakdown of waste under an oxygen-reduced atmosphere (lower than necessary for complete combustion), which creates a synthesis gas 'syngas' (e.g. the conversion of coal into city gas).

Waste Reception
Incoming vehicles enter the site and proceed to the weighbridge where the quantity of incoming fuel is checked and electronically recorded. Vehicle loads are inspected at the weighbridge to confirm the nature of incoming fuel and only authorised fuel is permitted to proceed to the fuel reception area.

From here, vehicles are directed to a tipping bay located within the tipping hall to tip their waste load into the waste storage bunker. A large refuse handling crane mixes the waste to create a more uniform fuel and to prevent it becoming anaerobic and thereby reduce the production of odour. The crane loads the waste into the feed hopper, which feeds waste into the combustion process.

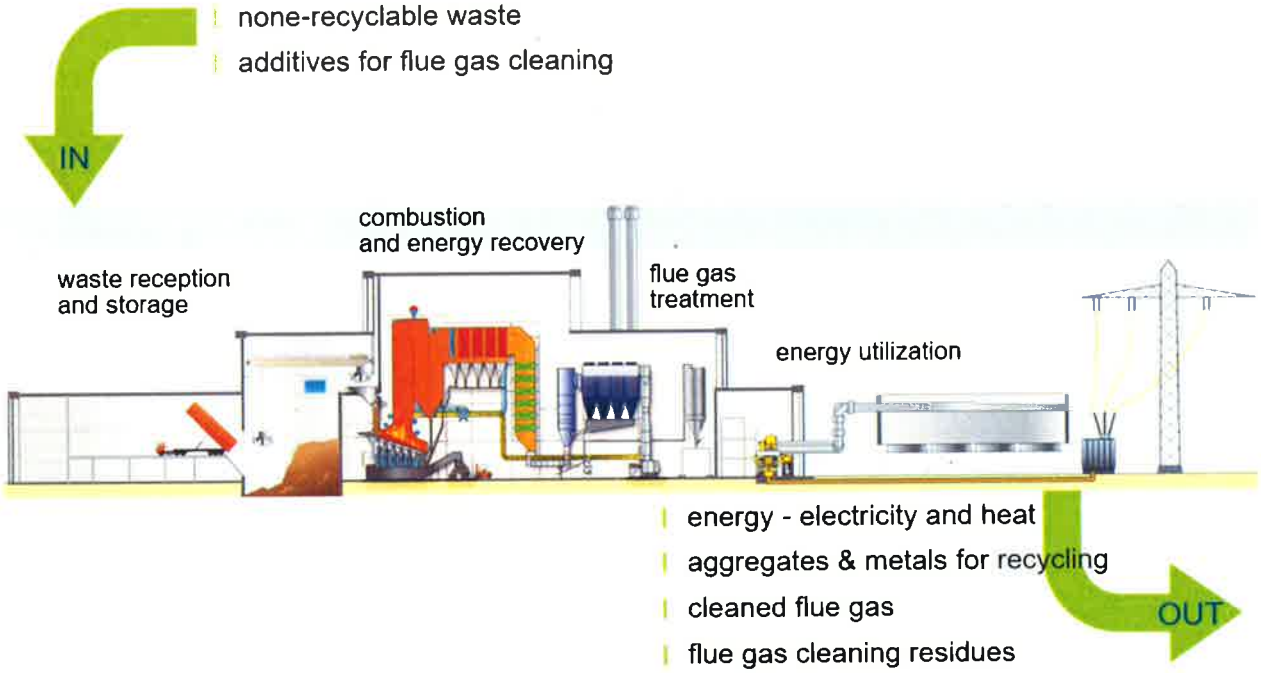

Figure 9: *Energy from waste process*

Combustion
The combustion process comprises of the grate, where the waste is burnt. A fully integrated control system ensures stable and efficient operation and optimised fire position on the grate. The combustion of the waste requires air, which is drawn via the primary air fan from above the waste bunker located in the tipping hall and through the grate to support the combustion process. The movement of air creates a slight negative pressure in the tipping hall such that odours and dust do not escape from the building.

Energy Recovery
The energy recovery plant comprises of a steam turbine and generator. The energy released is used to produce superheated steam, which is expanded in a turbine generator to generate electricity. The generator produces electricity that is used to operate the plant. The remaining electricity is transmitted to the nearby electricity grid system.

Flue Gas Treatment
Flue gas would be cleaned in the Flue Gas Treatment (FGT) plant to control emissions of acid gases, particulates, dioxins and furans and heavy metals. The gases released from the waste are mixed with secondary air and recirculated flue gases above the grate. This assures complete combustion and lowest carbon monoxide (CO), nitrogen oxides (NOx) and Volatile Organic Compound (VOC) emissions. The recirculation of flue gases also increases the plant's energy efficiency. Flue gases are then cleaned to strictest standards and are continuously monitored before they are released at the stack.

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

2.5. Applicant's Need and Justification for the Development

The Applicant considers the continued population growth across the Sydney metropolitan area is contributing to an increase of waste materials associated with the building and construction industry, as well as the operation of commercial and industrial premises. Despite continual improvements in waste recycling and material reuse, a portion of all waste streams cannot be reused or recycled as it is either too small or too dirty. These residual waste wastes are presently being landfilled. The Applicant's market availability assessment suggests that in the 2016-17 financial year, approximately 551,200 tpa of C&D (214,500 tpa) and C&I (336,700 tpa) residual waste in the Metropolitan Levy Area (MLA) could have been used for energy recovery. By 2018-19, the Applicant estimates this would increase to an estimated 582,700 tpa, which justifies the scale of the facility at 552,500 tpa.

The Applicant therefore considers the proposed energy from waste facility can play a significant role in maximising the efficient and sustainable use of resources in line with the EPA's *Energy from Waste Policy Statement (2015)* (EfW Policy) and is preferable to the treatment or disposal of waste in accordance with the resource recovery priorities established by the waste hierarchy.

The Applicant considers the location of the site to be suitable due to its proximity to the M4 and M7 Motorways and the direct synergies between the proposed energy from waste facility and the adjoining Genesis recycling facility and landfill which is proposed to provide a portion of the waste feedstock. Other reasons the site has been selected include its proximity to other residual waste fuel sources in the region, availability of the existing supporting services infrastructure, excellent road links and separation from residential areas.

Additional benefits identified by the Applicant include:

- the introduction of a new technology to NSW to break future reliance on landfilling as the sole repository of residual waste, providing a sustainable solution to the need to reduce the need for additional landfill sites in Sydney Metropolitan Area
- provision of clean energy to the Sydney market
- a net positive greenhouse gas effect, eliminating the emission of approximately 544,000 tpa of carbon dioxide
- a design that responds to the natural topography of the site and minimises visual impacts
- generation of employment opportunities in Western Sydney.

3. STRATEGIC CONTEXT

3.1. NSW Energy from Waste Policy Statement (2015)

In 2015, the EPA released the EfW Policy to increase investment in energy from waste infrastructure and deliver regulatory certainty to industry and confidence to the wider community. The EfW Policy sets out a framework for the operation of new purpose-built facilities and other existing facilities proposing to thermally treat waste or waste-derived materials for the recovery of energy. The EfW Policy aims to ensure that all energy from waste facilities:

- have minimal risk of harm to human health and the environment
- will not undermine higher order waste management options, such as avoidance, reuse or recycling (i.e. to avoid mass burn disposal outcomes).

To ensure emissions are below levels that may pose a risk of harm to the community, facilities must meet current international best practice techniques in relation to:

- process design and control
- emissions control equipment design and control
- emissions monitoring with real-time feedback to the controls of the process.

The EfW Policy underpins the key policy objectives of NSW's waste legislation, being:

- the *Protection of the Environment Operations Act 1997* (POEO Act), which sets the framework to ensure human health and the environment are protected
- *Waste Avoidance and Resource Recovery Act 2001* (WARR Act), which aims to ensure waste management is considered in an orderly manner (ie avoid, reuse, recycle and energy recovery).

As such, the EfW Policy is a key matter for the Department to consider as it is:

- the primary policy in NSW which governs the assessment and consideration of these proposed facilities

- provides technical criteria to assess to ensure the potential social and environmental impacts of the proposal are considered and to determine if the proposal is in the public interest, which are all matters required to be considered by a consent authority under section 4.15 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Facilities proposing to thermally treat any waste or waste-derived materials that are not listed as an 'eligible waste fuel' must meet the requirements of an 'energy recovery facility'. These requirements are specified in the EfW Policy and include a range of technical, thermal efficiency and resource recovery criteria. The Applicant considers it can meet these requirements.

The EfW Policy, WARR Act and the *NSW Waste and Resource Recovery Strategy 2014-21* (WARR Strategy 2014-21) are underpinned by the waste hierarchy. The waste hierarchy provides guidance on the order of preference of approaches to achieve efficient resource use. Energy from waste is included in the waste hierarchy, however, the recovery of energy is a lower order waste management approach than avoid, reduce, reuse and recycle (refer **Figure 10**).

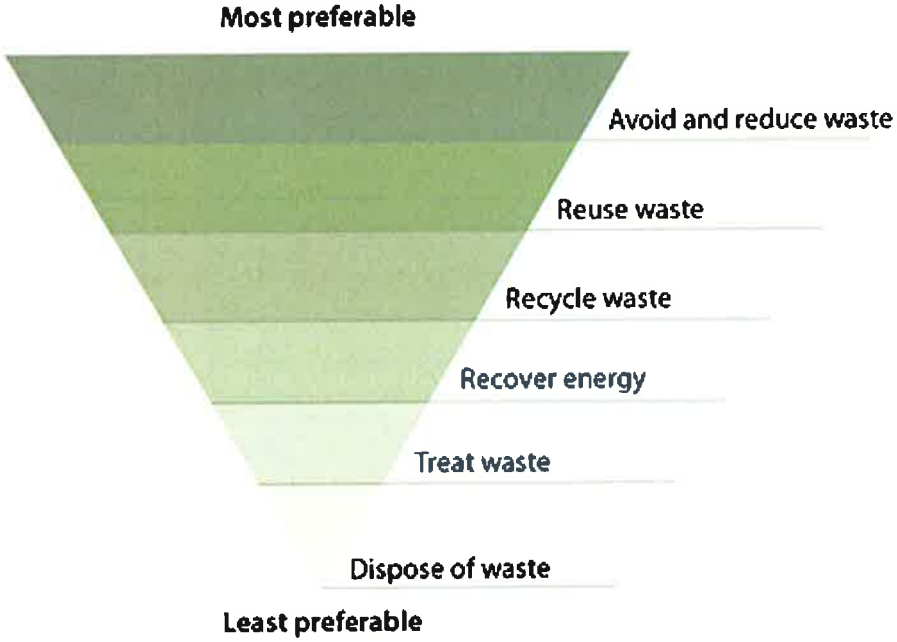

Figure 10: *The Waste Hierarchy*

The Department's detailed assessment against the requirements of the EFW Policy is in **Section 6.1** of this report.

3.2. Premier's Priorities

The NSW Government has announced the Premier's Priorities which cover 12 key areas including economic growth, provision of infrastructure, protection of vulnerable communities, improving education and environmental protection. One of Premier's key priorities is Creating Jobs. The NSW Government aims to provide 150,000 new jobs over the next four years.

The proposed development would contribute toward 'Creating Jobs' by providing 500 new construction jobs and 55 operational jobs in the Blacktown LGA. The development represents approximately $334 million capital investment in industrial development that would generate a considerable number of jobs in Western Sydney.

3.3. Greater Sydney Region Plan

In March 2018, the Greater Sydney Commission released the Greater Sydney Region Plan: A Metropolis of Three Cities (the Plan). The Plan is built on a vision of three cities, the Western Parkland City, the Central River City and the Eastern Harbour City. The 40-year vision to 2056 brings new thinking to land use and transport patterns to boost Greater Sydney's liveability, productivity and sustainability by spreading the benefits of growth. The proposed development is located within the Western Parkland City.

The development is consistent with the Plan's direction of 'An efficient city: Using resources wisely' and Objective 33: 'A low-carbon city contributes to net-zero emissions by 2050 and mitigates climate change'.

The proposed development would contribute toward net-zero emissions through the diversion of waste from landfill and the subsequent reduction in greenhouse gas emissions.

3.4. Central City District Plan

The Central City District Plan sets a 20-year vision for the Blacktown, Cumberland, Parramatta and The Hills local government areas to manage growth in the context of economic, social and environmental matters to achieve the 40-year vision of Greater Sydney Region Plan.

Planning Priority C19 of the Plan aims to reduce carbon emissions and manage energy, water and waste efficiently. In giving effect to the Greater Sydney Region Plan, this Planning Priority delivers on Objective 33: A low-carbon city contributes to net-zero emissions by 2050 and mitigates climate change; Objective 34: Energy and water flows are captured, used and re-used; and Objective 35: More waste is re-used and recycled to support the development of a circular economy and the corresponding strategies.

The Plan encourages a circular economy by designing waste out of the system and exploring opportunities for achieving a pathway toward net-zero greenhouse gas emissions by 2050. One potential pathway is the diversion of waste from landfill. The focus of achieving this is on recycling and reducing waste. It is also noted that additional sites for waste management in Greater Sydney would improve efficiencies in managing waste and therefore, where possible, additional land should be identified for waste management, re-processing, re-use and recycling.

The waste to energy industry is identified as a step toward achieving a circular economy and a reduction of greenhouse gases, however, it is primarily targeted at processing organic waste through an energy from waste facility to reduce waste being sent to landfill and help reduce greenhouse gas emissions. Only 20% of the proposed waste feedstock for the facility is classed as 'organic' waste. Additionally, the primary focus in the Plan to achieve the diversion of waste from landfill is through recycling and reducing waste, not through the recovery of energy.

Therefore, the Department considers the District Plan does not directly support the proposal in its current form for the following reasons:

- it primarily proposes the thermal treatment of inorganic C&D and C&I waste and only a small proportion (20%) of organic waste
- it is likely to result in the use of residual waste for energy recovery rather than recycling and does not ensure that only the residual from bona-fide resource recovery operations are eligible for use as feedstock for the facility.

3.5. NSW Waste Avoidance and Resource Recovery Strategy 2014-21

The NSW Waste Avoidance & Resource Recovery Strategy 2014-21 (WARR Strategy) sets clear directions for a range of priority areas. The Strategy sets a number of targets, including targets for recycling from the three waste streams – MSW, C&I waste, and C&D waste. The Strategy also includes a target to increase waste diverted from landfill to 75%. The Strategy sets the following targets for 2021-22 to increase recycling rates:

- from 52% to 70% for MSW
- from 57% to 70% for C&I waste
- from 75% to 80% for C&D waste

Progress towards achieving the targets in the WARR Strategy is reported every two years. The most recent data, from 2014-15 shows that NSW continues to make good progress towards meeting these targets with recycling rates at 58.2% for MSW, 58.1% for C&I and 70.7% for C&D.

The WARR Strategy 2014–21 is a key component of the Government's vision for the environmental, social and economic future of the State that will be supported financially by the EPA's *Waste Less, Recycle More* initiative.

Key Result Area 3 of the WARR Strategy is to divert more waste from landfill. Reuse and recycling will remain the main avenues for diverting waste from landfill with energy recovery providing a new means of future diversion from landfill for residual waste remaining from recycling operations.

Where further recycling is not feasible, the WARR Strategy states it may be possible to recover the energy from the material and feed that back into the economy where this is acceptable to the community.

A total of 963 public submissions objected to the proposed development. The significant number of public submissions in opposition to the proposed development clearly indicates the current proposal is not acceptable to the local community.

3.6. Draft Waste and Resource Recovery Infrastructure Strategy 2017- 2021

The EPA carried out a waste infrastructure needs analysis to inform the development of the draft Waste and Resource Recovery Infrastructure Strategy 2017 - 2021. The EPA's 10-week consultation period closed in November 2017. The EPA is now reviewing submissions and will publish the final strategy later this year.

This strategy will aid ongoing development of regional waste and resource recovery implementation plans. This draft strategy has been developed to guide decision making to ensure NSW gets the correct mix of infrastructure to meet future needs.

The draft strategy states that under the current policy and regulatory settings in NSW the manufacture and export of RDF is generally more financially attractive than creating energy recovery facilities to thermally treat this waste. In addition, low landfill gate fees in Queensland attract material suitable for RDF or energy recovery (mixed light plastic, timber and cardboard). If policy and regulatory settings are adjusted to support NSW based energy recovery it is likely that up to four large scale energy recovery facilities could service the whole state, with only two of these identified for the Sydney region, one in the Hunter and one in the Southern Region.

The draft strategy identifies a need for additional energy recovery waste infrastructure to treat approximately 234,000 tpa of residual waste in the Sydney region. The primary fuel for these facilities is identified as RDF and the 'light fraction' of C&D waste, being mixed light plastic, timber and cardboard.

The proposed development is therefore considered to be inconsistent with the identified need for energy recovery waste infrastructure in the draft strategy as it is proposed to thermally treat 552,500 tpa of residual waste, which is almost double the identified need. Additionally, the proposal does not propose to treat any RDF as part of the proposed design fuel mix.

3.7. Western Sydney Waste Avoidance and Resource Recovery Strategy 2011-2017

The Western Sydney Waste Avoidance and Resource Recovery Strategy 2011-2017 was developed by the Western Sydney Regional Organisation of Councils (WSROC) and explores options for addressing waste management challenges into the future. The Strategy sets regional targets that align with the six themes that are in the NSW WARR Strategy's objectives. The actions identified for implementation at a regional scale are centred around the 'themes' of avoiding and reducing waste generation, increasing recycling, diverting more waste from landfill, managing problem wastes better, reducing litter and illegal dumping and enhancing regional cooperation.

An action under the Strategy to increase recycling and reduce waste to landfill includes the facilitation of energy from waste projects and opportunities. The proposed facility at Eastern Creek is identified as a potential development in the Strategy amongst a number of other proposals to address the future management of residual waste in Western Sydney, including resource recovery and processing facilities, all of which would be subject to approval and would contribute to the diversion of waste from landfill.

The Strategy has not been revised for 2018 and beyond. WSROC's submission on the Amended EIS acknowledges that energy from waste facilities are used in cities around the world, but it considers the NSW regulatory framework is not equipped to deal with this technology especially for the scale and proposed development location. Until Australian guidelines and NSW environmental laws and standards meet global best practices for protecting community and environmental health, WSROC are of the opinion that the building of energy from waste facilities in urban areas should not be considered. To do so would put our communities at unnecessary risk.

3.8. Western Sydney Regional Waste and Recycling Infrastructure Needs Assessment

The Western Sydney Regional Waste and Recycling Infrastructure Needs Assessment (the Needs Assessment) was prepared by WSROC in 2015. The purpose of the project was to assess the various types, locations, availability and planned development of waste and resource recovery facilities throughout the western Sydney region and to make recommendations for infrastructure required to meet future

municipal waste management needs. The report also provides a framework for understanding waste and resource recovery infrastructure, including an explanation of the facilities already established, the technologies they employ and the history of infrastructure development in and around western Sydney.

The Needs Assessment concluded the Sydney Metropolitan Area could accommodate up to four energy recovery facilities, in addition to Earth Power, an existing food waste to energy facility in Camelia (uses anaerobic digestion technology to convert food waste into electricity). The emphasis is on processing residual waste from mixed waste (putrescible) treatment facilities and lifting overall resource recovery.

The Applicant's proposed energy from waste development at Eastern Creek is specifically identified in the Needs Assessment as proposing more capacity than required and may therefore utilise material that could otherwise be recovered through planned and additional mixed (putrescible) waste treatment, non-putrescible waste material recovery facilities (MRF) or C&D waste processing facilities. A smaller waste to energy facility with a capacity of up to 400,000 tpa was considered sufficient to process residual wastes from putrescible and non-putrescible sources and other resource recovery facilities in Sydney Metropolitan Area, even under a low source separation scenario.

The proposed development is therefore considered to be inconsistent with the identified need for energy recovery waste infrastructure in the Needs Assessment in terms of both its proposed capacity to treat up to 552,500 tpa of residual waste and the proposed non-putrescible waste feedstock. Furthermore, as discussed in **Section 6.1** of this report, the nominated capacity has the potential to result in waste being used for energy recovery rather than the preferred outcomes of re-use and recycle. The Applicant does not provide assurances that higher order waste management opportunities enshrined in the WARR Act and WARR Strategy will be maximized and not eroded.

4. STATUTORY CONTEXT

4.1. State Significant Development

The development is State significant development pursuant to Section 4.36 of the EP&A Act because it involves development with a CIV of more than $30 million for the purposes of electricity generating works which meets the criteria in Clause 20 of Schedule 1 in *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). Consequently, the Independent Planning Commission is the consent authority for the proposed development.

4.2. Clause 55 – Amended Development Application

Under clause 55 of the EP&A Regulation, a development application may be amended or varied at any time before its determination, subject to the agreement of the consent authority.

As described in **Section 2** of this report, the application was amended on two occasions. The first amendment was presented in an Amended EIS on 29 November 2016 and the second amendment was presented in the RTS on 29 September 2017.

The Department accepted the amendments to the development application, on 7 December 2016 (for the Amended EIS) and 12 December 2017 (for the RTS).

Under section 89F(4) of the EP&A Act (as in force at the time), the Secretary was required to consider if further public participation (ie exhibition) is required by determining whether the:

- amended application substantially differs to the original application
- environmental impacts of the development have not been reduced by the changes made.

As the Amended EIS contained a substantial amount of new technical information regarding the proposed design of the facility, the Department was of the view the amended application substantially differed from the original application and the environmental impacts of the development had not reduced by the changed made. Therefore, the Amended EIS was publicly exhibited as described in **Section 5.4.1** of this report.

With respect to the further amended application as described in the RTS submitted on 29 September 2017, the Department was of the view:

- the amended application did not substantially differ from the original application
- the amendments resulted a facility half the scale of that originally proposed, thereby reducing the environmental impacts identified in the assessment of the original application.

As such, the RTS did not require further public exhibition under section 89F (as in force at the time) of the EP&A Act.

4.3. Permissibility

The site forms part of the NSW Government's Western Sydney Employment Area under State Environmental Planning Policy (Western Sydney Employment Area) 2007. The land is zoned IN1 General Industrial under this policy. The development constitutes a 'waste management facility' and 'electricity generating works' as defined by the Standard Instrument – Principal Local Environmental Plan. Both of these uses are prohibited under the WSEA SEPP in the IN1 General Industrial zone.

Clause 34 of the ISEPP identifies development that is permitted with consent. Clause 34(1) states that development for the purpose of 'electricity generating works' may be carried out with consent in a prescribed industrial zone.

Therefore, under the provisions of the ISEPP, the proposal is permissible with consent.

4.4. Consent Authority

In accordance with clause 8A of the SRD SEPP and section 4.5(a) of the EP&A Act, the Independent Planning Commission (Commission) is declared the consent authority for the application as:

- the relevant local council (Blacktown City Council) has made an objection
- there are more than 25 public submissions in the nature of objections and
- a reportable political donation been made.

4.5. Other Approvals

Section 4.42 of the EP&A Act requires further approvals to be obtained, considered or determined in a manner that is consistent with any Part 4 approval for SSD projects under the EP&A Act. In the case of the proposed development, an Environment Protection License (EPL) would need to be applied for and issued by the Environment Protection Authority (EPA) under the *Protection of the Environment Operations Act 1997*. The Department has consulted the EPA and considered the relevant issues relating to the approval of a licence in its assessment of the proposal.

4.6. Considerations under Section 4.15 of the EP&A Act

Section 4.15 of the EP&A Act sets out matters to be considered by a consent authority when determining a development application. The Department's consideration of these matters is set out in Section 6 and **Appendix B** of this report. In summary, the Department is not satisfied the proposed development is consistent with the requirements of Section 4.15 of the EP&A Act.

4.7. Environmental Planning Instruments

Under Section 4.15 of the EP&A Act, the consent authority, when determining a development application, must take into consideration the provisions of any environmental planning instrument (EPI) and draft EPI (that has been subject to public consultation and notified under the EP&A Act) that apply to the development.

The Department has considered the development against the relevant provisions of several key environmental planning instruments including:

- State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP)
- State Environmental Planning Policy (Infrastructure) 2007 (ISEPP)
- State Environmental Planning Policy No. 33 – Hazardous and Offensive Development (SEPP 33)
- State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55)
- State Environmental Planning Policy No. 65 – Advertising Structures and Signage (SEPP 64)
- State Environmental Planning Policy (Western Sydney Employment Area) 2007 (WSEA SEPP).

Detailed consideration of the provisions of all EPIs that apply to the development is provided in **Appendix C**. The Department is satisfied the development generally complies with the relevant provisions of the EPIs, with the exception of the WSEA SEPP, as discussed below.

State Environmental Planning Policy (Western Sydney Employment Area) 2009

The WSEA SEPP aims to protect and enhance the WSEA for employment purposes. It aims to promote economic development and creation of employment, provide for the co-ordinated planning and development of land, rezone land for employment or environmental conservation purposes, improve

certainty and regulatory efficiency, and conserve and rehabilitate culturally or environmentally valuable areas.

The WSEA SEPP requires a consent authority to take the Eastern Creek Precinct Plan (Stage 3) into consideration when determining a development application on land to which the Precinct Plan applies. An objective of the Precinct Plan is for development to achieve a minimum employment density target of 45 jobs per hectare in order to achieve the overall projected employment forecast of approximately 20,000 jobs for the whole Precinct. This equates to a requirement of 900 jobs for the 20 ha site. The proposed facility would generate 55 permanent jobs, which is equivalent to an employment density of approximately three jobs per hectare.

Based on the size of the proposed site for the proposed facility, being approximately 20 ha, the proposal would generate only 6% of the employment density target set by the Eastern Creek Precinct Plan (Stage 3). This is significantly short of the target of 900 jobs for the site. The Department therefore considers the proposed development is not consistent with the objectives of either the WSEA SEPP or the Precinct Plan as it does not significantly contribute to job creation in the Western Sydney area.

4.8. Public Exhibition and Notification

Under Section 2.22 and Schedule 1 of the EP&A Act, the Secretary is required to make the development application and any accompanying information of an SSD application publicly available. Over the course of the assessment the Department publicly exhibited the application on two occasions:

- the EIS was on public exhibition from 27 May 2015 until 27 July 2015, a total of 61 days
- the Amended EIS was exhibited from 9 December 2016 to 1 March 2017, a total of 83 days.

Details of the exhibition process and notifications are provided in **Section 5.1.**

4.9. Objects of the EP&A Act

In determining the application, the consent authority should consider whether the proposal is consistent with the relevant objects of the EP&A Act.

The Department has fully considered the objects in section 1.3 of the EP&A Act throughout its assessment of the application, including the encouragement of ecologically sustainable development (ESD). The Department considers the development application is not consistent with the objects of the EP&A Act (see **Table 7**).

Table 7: *Considerations Against the Objects of the EP&A Act*

Object of the EP&A Act	Consideration
(a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources	The assessment reveals there is an unknown and potentially unacceptable risk to human health for the local community and no obvious amenity benefits to the surrounding residents as a result of the proposed development. The Department does not consider the public benefit of an energy from waste facility of this scale in close proximity to residential areas in Western Sydney outweighs the potential unacceptable impacts that the proposed development would have on the surrounding local community. As a consequence, the Department does not consider the proposed development promotes the social and economic welfare of the community or a better environment.
(b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment	The DA is not consistent with the principles of ESD, in particular, the precautionary principle and intergenerational equity. Further discussion is provided in **Section 4.10.**
(c) to promote the orderly and economic use and development of land	The DA allows for adequate infrastructure and service provision (both local and regional) to facilitate broader economic development of the area. However, based on the size of the proposed site for the proposed facility, being approximately 20 ha, the proposal would generate only 6% of the employment density target set by the Eastern Creek Precinct Plan (Stage 3). This is significantly short of the target of 900 jobs for the site. The Department therefore considers the development does not promote the orderly and economic use and development of land.

Object of the EP&A Act	Consideration
(d) to promote the delivery and maintenance of affordable housing	The DA does not propose any affordable housing.
(e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats	The development requires removal of 0.57 ha of River Flat Eucalypt Forest (RFEF) Endangered Ecological Community (EEC) and 0.27 ha of Cumberland Plain Woodland (CPW) Critically Endangered EEC, which would be offset by the purchase and retiring of 18.9 ecosystem credits in accordance with NSW Biodiversity Offsets Policy. The Applicant has provided an offset strategy to offset the loss of this sensitive vegetation in accordance with this policy.
(f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage)	The development activities have the potential to result in a range of impacts to the Aboriginal heritage values of the area. Three aboriginal sites were identified within the site, one of these sites will be directly physically affected. The Applicant has proposed a number of management and mitigation measures for all three sites. The Department considers the potential impacts on Aboriginal heritage would be minimal.
(g) to promote good design and amenity of the built environment	The Department's assessment has found there would be residual visual impacts that would not be ameliorated by the proposed vegetation planting and building treatments. There would be moderate residual impacts when viewed from the Peppertree recreational park, Blackbird Lane path and Old Wallgrove Road. The upper portion of the building and stack would be visible from these locations. The Department considers the visual impacts of the development may be acceptable given the industrial zoning of the site, the existing industrial character of adjacent land uses, the site's location within the WSEA and the distance separating residential areas (over 1 km). However, residual impacts would need to be managed through appropriate management and mitigation measures.
(h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants	The DA includes the construction of a control room, workshop, offices and amenities for operational staff. The Applicant has provided a Construction Environmental Management Plan, however, design drawings or maintenance schedules for the proposed buildings have not been provided. The Applicant has provided detailed procedures on how the proposed facility would be run during commissioning and operational phases by operational staff, including training requirements and qualifications. This includes training and information for staff regarding work health and safety.
(i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State	The Department's assessment has been informed by submissions from local, State and Commonwealth Government (refer to **Section 5**). The Department has also considered a range of strategic studies prepared by both State and local government. The Department's assessment has promoted the sharing of the responsibility for environmental planning across different levels of government.
(j) to provide increased opportunity for community participation in environmental planning and assessment	The Department publicly exhibited the DA in 2015 and an amended application in 2016-17 and has considered submissions from the public and special interest groups during its assessment of the application. The Department consulted with government authorities at three key stages, receiving submissions on the EA, Amended EIS and RTS. There has been considerable opportunity for public involvement throughout the assessment of the application.

4.10. Ecologically Sustainable Development

The EP&A Act adopts the definition of ESD found in the *Protection of the Environment Administration Act 1991* (POEA Act). Section 6(2) of that Act states that ESD requires the effective integration of economic and environmental considerations in decision-making processes and that ESD can be achieved through the implementation of:

(a) the precautionary principle;
(b) inter-generational equity;
(c) conservation of biological diversity and ecological integrity; and
(d) improved valuation, pricing and incentive mechanisms.

The Precautionary Principle
The POEA Act states, *if there are threats of serious or irreversible environmental damage, the lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.*

The Department's assessment in **Section 6.1** and **Section 6.2** of this report has found the proposed development is inconsistent with the EfW Policy and as such, the potential impacts to air quality and the risk to human health are unknown.

The Applicant has attempted to address these concerns through multiple revisions to the air quality impact assessment and the human health risk assessment. However, the application documents have failed to provide sufficient certainty to the key government authorities and the independent experts, that the air quality impacts and risk to human health can be predicted with an appropriate level of confidence. The Applicant has been unable to demonstrate with certainty there is no threat to human health, or that these impacts can be effectively avoided or mitigated.

Due to the lack of certainty regarding the air quality impacts, there is potential for the risk to human health being underestimated. In this case, a precautionary approach is recommended due to the lack of scientific certainty around the composition and concentration of chemicals in the stack emissions and the concentrations at which these pollutants would be present at ground level, potentially being inhaled or ingested by those people living or working in the vicinity of the proposed development.

Inter-generational Equity
The POEA Act states, *the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.*

The Department's assessment in **Section 6.2** has found the air quality impacts and chronic (long-term) health risks to the community around the proposed development have not been adequately quantified or predicted with a sufficient level of confidence. Therefore, the risk of ongoing air quality impacts for future generations is unknown. The Department cannot be certain whether the health, diversity and productivity of the environment will be maintained for the benefit of future generations.

Having regard to the expert advice from EnRisks and the views of the EPA and NSW Health, the Department's assessment has found there is an unknown and potentially unacceptable risk to human health for the local community, now and into the future. As such, having regard to the principles of ecologically sustainable development, namely the consideration of inter-generational equity, the proposal cannot be supported in its current form.

Conservation of Biological Diversity and Ecological Integrity
The POEA Act states, *conservation of biological diversity and ecological integrity should be a fundamental consideration.*

As demonstrated by the Department's assessment in **Section 6** of this report, the development may have adverse impacts on native flora or fauna, including threatened species, populations and ecological communities, and their habitats. The development requires removal of 0.57 ha of River Flat Eucalypt Forest (RFEF) Endangered Ecological Community (EEC) and 0.27 ha of Cumberland Plain Woodland (CPW) Critically Endangered EEC, which would be offset by the purchase and retiring of 18.9 ecosystem credits in accordance with NSW Biodiversity Offsets Policy. The Applicant has provided an offset strategy to offset the loss of this sensitive vegetation in accordance with this policy.

The Department concludes the proposal is not consistent with the principles of ESD, namely the precautionary principle and the consideration of inter-generational equity.

4.11. Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)
Under the EPBC Act, assessment and approval is required from the Commonwealth Government if a development is likely to impact on a matter of national environmental significance (MNES), as it is considered to be a 'controlled action'. The EIS for the development included a preliminary assessment of the MNES in relation to the development and concluded the development would not impact on any of these matters, and is therefore not a 'controlled action'. As such, the Applicant determined that a referral to the Commonwealth Government was not required.

4.12. NSW Parliamentary Inquiry

On 6 April 2017, a Parliamentary Inquiry was established to inquire into and report on matters relating to the waste disposal industry in New South Wales, with particular reference to 'energy from waste' technology. The Inquiry was called for by the Labor Government with support from the Christian Democratic Party and Blacktown City Council (Council).

On 28 March 2018, the parliamentary committee published a report on the findings of the Inquiry. The key findings are summarised below:

- NSW is the second highest per capita producer of waste in the world
- a greater percentage of waste levy funds should be directed to support the provision of additional waste services, initiatives and infrastructure
- there has been debate on whether the EPA is regulating the waste industry effectively given concerns with illegal dumping, criminal elements in the industry and issues with strong regulatory action where required
- there was debate whether the EfW Policy is sufficiently robust
- the parliamentary committee supports energy from waste projects in some circumstances, however made a number of recommendations to strengthen the regulatory framework
- the committee does not support the proposed development of an energy from waste proposal at Eastern Creek given the level of concerns expressed about the proposal and the uncertainty in terms of impacts on human health and environment.

The parliamentary committee made a total of 36 recommendations in response to these findings including specific recommendations relating to the Applicant's proposal, the assessment of energy from waste proposals and other matters relating to the structure of the EPA, compliance and strategic considerations.

The Government's response to the recommendations is anticipated by September 2018. A copy of the report and recommendations is available on the NSW Parliament website.

4.13. Bills Introduced to NSW Parliament

In response to the significant opposition to the proposal there has been two Bills introduced to NSW Parliament.

On 23 November 2017, Mr Jeremy Buckingham MP introduced the *Environmental Planning and Assessment Amendment (Waste Incinerator Facilities – Residential Exclusion Zones) Bill 2017 (the Residential Exclusion Zones Bill).* The Residential Exclusion Zone Bill proposes to insert provisions into the EP&A Act that prohibit development of waste incinerator facilities on land that is within residential zones or within 15 kilometres of land that is within a residential zone.

On 7 February 2018, Mr Stephen Bali, MP, Member for Blacktown, introduced the *Environmental Planning and Assessment Amendment (Moratorium and Restrictions on Recovering Energy from Waste) Bill 2018.* The Bill proposes to amend the EP&A Act to establish:

- a restriction on any energy from waste facilities within the Sydney Basin
- a moratorium for the rest of NSW until further research is conducted on certain exclusion zones
- a Standing Expert Panel on energy from waste technology.

5. CONSULTATION AND SUBMISSIONS

As described in **Figure 4** of this report, the DA has been amended on two occasions since the original EIS was lodged in 2015. The first amendment was presented in an Amended EIS in 2016 and the second amendment was part of the Applicant's RTS in 2017. The Department and the Applicant have undertaken a range of consultation activities throughout the application process. The Department also visited the site on several occasions.

On 26 November 2013, the Department coordinated a Planning Focus Meeting with the key government authorities and the Applicant to assist the Department in preparing the Director General's Requirements (DGRs). This gave the Applicant an opportunity to present the proposal and for the government authorities to ask the Applicant questions and to determine their key assessment requirements.

The Department sought comments from Federal, State and local government authorities at each stage of the assessment. Independent expert advice was also sought from the Department's two experts at each stage of the assessment.

The Department consulted the public through two formal public exhibition processes for the EIS and the Amended EIS to provide an opportunity for the community to express their views and to allow the Applicant to formally respond to the issues raised.

This section summarises the consultation activities and the issues raised.

5.1. Original EIS

The Applicant, as required by the DGRs, undertook consultation with relevant local and State authorities as well as the community and affected landowners. The Department undertook further consultation with these stakeholders during the exhibition of the EIS and throughout the assessment of the application. These consultation activities are described in detail in the following sections.

Consultation by the Applicant

Over the course of the assessment, the Applicant carried out a range of consultation activities. Throughout preparation of the EIS the following consultation was carried out:

- letter notification to approximately 4,000 residences in Minchinbury and Erskine Park
- door knock of neighbouring businesses along Wonderland Drive, Eastern Creek
- community information day and site tour
- correspondence sent to key stakeholders and community groups
- consultation and briefings with key government authorities
- a project website, 1800 community line and project email to provide a point of contact for stakeholder and community enquiries
- media releases and briefings to local newspapers.

Consultation by the Department

The Department consulted with relevant public authorities throughout preparation of the DGRs.

After accepting the DA and EIS for the application, the Department:

- made it publicly available from **27 May 2015** until **27 July 2015**:
  - on the Department's website;
  - at the Department's Information Centre (Bridge Street, Sydney); and
  - at Blacktown City Council,
- notified approximately 3,000 landowners within a 2 km radius of the site about the exhibition period by letter
- notified relevant State and Commonwealth government authorities and Blacktown City and Penrith City Councils by letter
- advertised the exhibition in the *Penrith Blacktown Advocate, Penrith Press, Sydney Morning Herald* and *Daily Telegraph*.

A total of 44 submissions were received on the proposed development during the exhibition period, including:

- ten submissions from public authorities (six State, two Commonwealth and two Councils)
- eight from local businesses and special interest groups
- 26 from the general public (including one online petition).

Of the 34 submissions received from the general public, local businesses and special interest groups:

- 29 objected to the development
- four provided comments
- one expressed support.

Council, the EPA and NSW Health Western Sydney Local Health District (NSW Health) objected to the proposed development. A summary of the issues raised in submissions is provided below, with a copy of each submission included in **Appendix E.**

Public Authorities

Blacktown City Council (Council) objected to the proposed development on the basis that the Applicant failed to adequately address key matters outlined in the DGRs. In particular, Council raised concerns regarding the technical accuracy of many of the key technical reports (air quality, odour, greenhouse gases, soils and water), waste management, the source and composition of waste, town planning, engineering and drainage. Council concluded the facility as proposed would not meet relevant environmental criteria or standards and urged the Minister not to supports the proposal in its current form. Council engaged an independent environmental consultant, Jacobs, to undertake a standalone review of the EIS to assist in their assessment process.

Penrith City Council reiterated concerns raised by Council and advised the development consent should not be granted. Penrith City Council is of the view the EIS is incomplete and needs further analysis and requested the Applicant be required to provide a detailed response to the matters and issues raised in Council's submission.

The **EPA** recommended the Department reject the proposal in its current form. The EPA advised it had significant concerns in relation to the human health risk assessment, ozone impact assessment, waste management report, consistency with the EfW Policy, air quality and greenhouse gas assessment and other technological aspects. The two independent expert reviews (engaged in collaboration with the Department) were also provided with the EPA's submission, which are discussed in more detail below.

NSW Health advised it did not support the approval of the proposal in its current form as it was unable to fully determine the actual or potential impact of the facility on human health, based on information provided in the Applicant's Human Health Risk Assessment.

The **Office of Environment and Heritage** (OEH) provided comments on the Applicant's Aboriginal cultural heritage assessment and biodiversity assessment reports. OEH advised the Aboriginal assessment had been undertaken in accordance with relevant guidelines and supported the proposed preservation and conservation of one known Aboriginal site within the land zoned E2 Environmental Conservation. OEH raised concern the assessment of impact on cultural heritage values of the Eastern Creek remnant landscape and the long-term conservation of a second Aboriginal site, known as Archbold Road 2, in the western part of the site and requested the Applicant provide additional information regarding these matters. OEH also raised concern the offsets were inadequate, the biodiversity assessment did not adequately describe how the principles of 'avoid, mitigate and offset' had been used, and a Vegetation Management Plan had not been provided.

The **Department of Primary Industries** (DPI) raised concern regarding the consistency of the riparian corridor width and the requirements of the Eastern Creek Precinct Plan (Stage 3). DPI also requested clarification on details of short-term and long-term groundwater dewatering.

Roads and Maritime Services (RMS) raised no objection to the proposal and provided comments regarding car parking and requested the Applicant prepare a Construction Traffic Management Plan prior to the issue of a construction certificate.

Endeavour Energy provided comments on network access and provided information regarding Endeavour Energy's public safety training resources for the Applicant.

The **Commonwealth Department of Infrastructure and Regional Development** (DIRD) commented on the proposed development's impacts on the new Western Sydney Airport at Badgerys Creek. DIRD raised concern regarding the impacts of hot air and particulates released from the proposed emission stacks on aircraft safety. It also recommended the Applicant prepare a plume rise assessment for the proposed emission stacks consistent with the National Airports Safeguarding Framework (NASF), which provides guidance on managing the risk of intrusions into operational airspace in the vicinity of airports.

Airservices Australia Corporation (ASA) provided comments on the impacts of the proposed development on airspace procedures and requested additional information regarding plume rise from the emission stacks.

While not consulted on the development, Hawkesbury City Council has also written to the Minister to express its opposition to the proposed development.

Special Interest Groups

The **Blacktown and District Environment Group** objected to the proposed development on the basis of its proximity to residential properties in Minchinbury, potential health impacts, visual impacts of the proposed emission stacks, odour and the removal of Cumberland Plain Woodland vegetation.

The **National Toxics Network** (NTN) objected to the proposed development on the basis it fails to meet the EfW Policy, the proposed technology is a 'mass combustion' technology, adverse air quality impacts from dioxins, mercury and ultrafine non-material particulates, generation and disposal of toxic ash, and an inadequate preliminary hazard analysis, fire risk assessment and HHRA. NTN recommended a transition from a linear economy to a circular economy, with a move toward a zero waste solution.

The **Total Environment Centre / Boomerang Alliance** objected to the proposed development on the basis it breaches state waste recycling targets (70% overall, 80% for C&D, 70% for C&I, 70% for MSW) and any potential long-term increases in recycling, the potential for hazardous waste materials within the waste feedstock to cause pollution spikes, and potential air quality impacts. A (second) subsequent submission from Boomerang Alliance raised further concerns regarding consistency with the Policy, risk of toxic emissions, consistency with the waste hierarchy, poor planning, consultation and transparency, and several matters regarding the proposed performance and safety of the proposal.

Jacfin Pty Limited, an adjoining landowner, objected to the proposed development. Jacfin engaged Allens and JBA Urban Planning Consultants Pty Ltd (JBA) to review the application on their behalf. Allens objected on the basis the proposed development would be an inappropriate use for the site, the Applicant failed to assess alternative locations or provide a site-specific development control plan, impacts associated with noise, air quality, health and visual amenity, inadequate details regarding power supply, regional transport infrastructure contributions, laydown areas, the bio-retention pond and riparian zone treatment. Key issues raised by JBA included the amenity of workers within the adjoining Eastern Creek Business Park, insufficient details regarding the location of electricity transmission cables, impacts associated with noise, air quality, health and visual amenity and site suitability.

Hanson Construction Materials Pty Ltd (Hanson), an adjoining landowner, raised concern the applicant had not sufficiently addressed several important matters, including insufficient consultation, transportation and the local road network, insufficient information regarding the proposed use of the laydown pads, and an inadequate assessment of air quality, surface water and groundwater impacts.

Australand engaged GHD to review and provide comments on the application on its behalf. GHD raised concerns regarding inadequacies in the assessments of air quality and ozone, human health risks, odour, flooding and traffic.

Sydney Airport Corporation Limited provided comment on the implications of the proposed development on the Western Sydney Airport (WSA) at Badgerys Creek. Sydney Airport recommended the Applicant undertake further investigations into important safety related concerns raised by the DIRD with respect to aircraft flying to and from the WSA. It was also recommended that no decision be made on the application until the draft EIS and Airport Plan for the WSA are released to enable an informed decision to be made regarding safety concerns.

The **Western Sydney Regional Organisation of Councils** (WSROC) expressed its support for the proposed development on the basis the facility is consistent with the *Western Sydney Regional Waste Avoidance and Resource Recovery Strategy 2014-2017* which aims to divert more waste from landfill and facilitate energy from waste developments. WSROC stated any proposed facility is expected to comply with the highest environmental standards to ensure maximum environmental benefit for the residents and employees of Western Sydney.

General Public

A total of 26 submissions were received from the general public, of which 25 objected (including the online petition) and one provided comment. Concerns raised in the submissions include:

- incremental and cumulative air quality, health and odour impacts
- location of the facility in close proximity to residential areas
- noise and vibration impacts
- traffic impacts
- visual impacts

- inadequate community consultation
- scale of the facility and impact on resource recovery
- previous compliance concerns with respect to the proposed operator
- need for the facility
- the choice of technology is outdated and stifles development of newer and emerging technology
- social impacts caused by falling property prices
- impacts on biodiversity.

Independent Expert Reviews

ARUP undertook an independent detailed assessment of the proposal against international best practice energy from waste technology and the EfW Policy. ARUP advised insufficient data had been provided to allow a full technical assessment of the technology and to determine whether the application meets the requirements of the EfW Policy. A large number of inconsistencies between the EIS and the supporting documents were also identified. ARUP recommended that the application not be approved in its current form.

EnRisks reviewed the Human Health Risk Assessment (HHRA) (Appendix O of the EIS) against the requirements of the enHealth guidelines, *Environmental Health Risk Assessment – Guidelines for assessing human health risks from environmental hazards* (2012) (enHealth Guidelines). EnRisks advised the assessment did not comply with the enHealth Guidelines and the conclusions of the HHRA could not be accepted until the risk assessment was revised and prepared in accordance with the appropriate methodology.

Copies of the independent review reports are included as **Appendix I** to this report.

5.2. Amended EIS

Due to the technical nature, complexity and number of issues raised in submissions and the concerns raised in the independent experts' technical reviews, the Applicant submitted an Amended EIS on 29 November 2016. The Amended EIS included a response to the issues raised during the exhibition of the original proposed development (see **Appendix F**). The Amended EIS was accepted in accordance with clause 55 of the *Environmental Planning and Assessment Regulation 2000*.

The amended proposal retained the same development description, being construction and operation of an energy from waste facility with an engineering design capacity to thermally treat up to 1.35 million tonnes of residual waste per year, including a boiler house, steam turbines for electricity generation and air emissions stacks. Key amendments to the proposal include:

- thermal treatment of an annual maximum of 552,500 tonnes of residual waste in Stage 1 and a total of 1.105 million tonnes in Stage 2
- phased implementation of the project, with implementation of Stage 2 subject to the Applicant satisfying the EPA of the availability of eligible waste fuels
- a revised Project Definition Brief, including a more detailed description of the proposal and a Proof of Performance Framework
- amended design fuel profile and composition and amended waste volume outputs
- increased waste storage capacity
- increased vehicle movements
- amended land description and revised subdivision plan
- revised technical reports for human health risk, air quality and greenhouse gases, odour, ozone, traffic, waste management, noise and vibration.

Consultation by the Applicant

Following preparation and submission of the Amended EIS, the Applicant carried out the following consultation activities:

- presentation and panel questions at Blacktown City Council Strategy Meeting
- community consultation at Eastern Creek and site tour
- attendance at Blacktown City Council and Penrith City Council community forums
- mailbox drop to 5,000 residents
- attendance at a community forum in Erskine Park
- presentation at the Coffs Harbour Waste Conference.

Consultation by the Department on Amended EIS

After accepting the Amended EIS for the application, the Department made it publicly available from 9 December 2016 until 1 March 2017. Notification and advertising was undertaken in the same way as for the original EIS, with the addition of making the document publicly available at Penrith City Council (Civic Centre and St Mary's Business Office),

In contrast to the original EIS, the Amended EIS generated a significant amount of attention and response with a total of 990 submissions received on the proposed development during the exhibition period, including:

- ten submissions from public authorities
- 15 submissions from special interest groups
- 965 submissions from the general public.

Of the 965 public submissions received:

- 949 objected to the development
- 14 provided comment
- two expressed support.

The location of these submitters is shown in **Figure 12** and **Figure 13** overleaf.

Of the 15 special interest group submissions received, 14 objected and one provided comment. A summary of the issues raised in submissions is provided below, with a copy of each submission included in **Appendix E**.

The Department met with the Mayor of Blacktown City Council and senior Council staff to discuss their concerns with the proposal.

In April 2017, the Department offered to meet with key residents and resident groups to discuss their concerns. However, these residents considered a meeting was not required. Notwithstanding, the Department has received telephone calls from those key residents, special interest groups and other members of the community to present their views on the proposal and seek advice regarding the status of the Department's assessment and the SSD assessment process.

On 7 June 2017, the Department met with representatives of a local school to discuss the school community's concerns with the proposal. Key concerns relate to the potential impacts of the proposed development on air quality and human health.

Public Authorities

Blacktown City Council (Council) objected to the proposed development and requested the application be refused on the basis of gaps in the EIS, insufficient verification the predicted emissions are valid and achievable, inconsistency with the objectives of the IN1 General Industrial Zone, adverse impacts on biodiversity and failure to encourage a high standard of development. Council engaged an independent consultant, Jacobs, to undertake a standalone review of the Amended EIS to assist with Council's assessment. Jacobs raised concerns regarding the validity of the proposal as a waste disposal solution, waste management, air quality, human health impacts, noise, soils and drainage, impacts on aviation airspace, appropriateness of the technology, lack of confidence in the operator and other general environmental and community concerns. Community forums were held by Council in November 2016, February 2017 and March 2017.

Penrith City Council objected to the proposed development for the same reasons given by Council and its independent expert. Council held a public meeting regarding the proposal on 16 February 2017. Thirty-six members of the public attended and raised concerns regarding the location of the development in close proximity to residential areas, air quality and odour, traffic, waste screening, the extent of notification, compliance history of the operator, length of the assessment and suitability of the technology. Penrith City Council recommended the application not be supported. These issues are closely aligned with the concerns raised by Council in its submission.

The **EPA** objected to the proposal and advised it could not support the proposal in its current form. The EPA advised many of the issues previously raised by the EPA during the exhibition of the original EIS in 2015 remain outstanding and had not been satisfactorily addressed. The EPA remained concerned

insufficient information had been provided to conduct a robust assessment of the potential impacts of the proposed facility, particularly in relation to the composition and source of the waste feedstock, potential air quality impacts, human health impacts and alignment with the Policy. The independent assessments undertaken by ARUP and EnRisks on the technological design and the HHRA, respectively, were submitted to support the EPA's submission. These reviews are summarised below.

NSW Health objected to the proposed development and advised it was unable to support the proposal in its current form. Concerns were raised regarding the veracity of the modelled emissions from the facility and the conclusions of the HHRA, management of waste feedstock inputs, and the increase in ground level concentrations of ozone levels, particulates, dioxins and furans and the subsequent potential impact on human health. Additional information was requested to satisfy NSW Health that the proposal will not have a negative impact on human health.

The **OEH** provided comments on the impacts of the proposal on Aboriginal heritage and biodiversity. OEH reiterated concerns regarding the lack of measures for the long-term conservation of a particular Aboriginal site known as Archbold Road 2 located in the western part of the site. OEH also noted the proposed offsets had not changed from the originally exhibited proposal, the offsets were still inadequate and the proposal will result in a net loss of biodiversity on the site. OEH recommended additional land containing the endangered ecological communities of Cumberland Plain Woodland and River Flat Eucalypt Forest be retained on site and/or off-site offsets be provided.

RMS requested additional information regarding the traffic modelling of the surrounding intersections to allow further assessment of the traffic impacts of the proposal. Further clarification and design details were also requested for the proposed future access to Archbold Road and the proposed access road from Honeycomb Drive.

The **Department of Industry, Resources and Energy** (DIRE) raised no concerns regarding the proposal.

The **DPI** provided comments and recommendations regarding protection of the riparian corridor, groundwater monitoring and dewatering, and requested further details regarding the potential salinity impacts of constructing a stormwater basin in the riparian corridor.

The **DIRD** commented on the proposal and confirmed the emissions plume from the proposed facility is unlikely to penetrate the WSA Obstacle Limitation Surface (OLS) and would not constitute a controlled activity under the *Airports Act 1996*. DIRD advised there remains a moderate risk of wildlife attraction to the site of the proposed facility and recommended ongoing monitoring activities should be undertaken to confirm there will not be an increased risk of bird and wildlife strike incidents and to assist in the development of future mitigation measures to reduce the risk of wildlife attraction, if required.

Airservices Australia commented on the proposal and advised the emission stacks and associated plume would not present an obstable to the airports at Sydney, Bankstown, Camden, Westmead Hospital or Richmond.

Special Interest Groups

The **Federal Members of Parliament**, Chris Bowen MP, Ed Husic MP and Emma Husar MP, representing the Federal electorates of McMahon, Chifley and Lindsay, respectively, objected to the proposal. Key concerns raised included strong community opposition and lack of appropriate engagement, the source and screening of waste, the veracity of the predicted air emissions and lack of any comparable plants due to the scale of the facility. Other concerns included management of ash, human health risk, and an inability to meet employment targets as specified in the Broader Western Sydney Employment Area Draft Structure Plan.

Greens NSW Member, Dr Mehreen Faruqi, objected to the proposed development in her capacity as Greens NSW Spokesperson for the Environment. Dr Faruqi objected on the basis the facility promotes the generation of waste, rather than waste avoidance, reduction and reuse, its proximity to residential areas, its location in Western Sydney and the potential risks to human health. Dr Faruqi also raised concern the facility would contradict the NSW Government commitments in the *Clean Air for NSW Consultation Paper*, and reiterated concerns raised by NSW Health and Council in their submissions on the proposal.

Greens NSW Member, Mr Jeremy Buckingham, objected to the proposed development due to its potential impacts on human health and the environment. In particular, concerns were raised as Greens NSW does

not consider the incineration of residual waste as clean 'green energy' and is not best practice with respect to the waste management hierarchy, risks to human health, potential reduction in land values, the management of contaminated waste ash and the risk of 'unapproved' contaminated wastes entering the waste feedstock.

Mr Edmund Atalla, MP, Member for Mt Druitt, objected to the proposed development due to flaws and deficiencies in the EIS, potential health impacts, potential for the incineration of hazardous materials, inconsistencies with the *Broader Western Sydney Employment Area Draft Structure Plan 2013* and concern that the development is not in the best interest of the community.

Minchinbury Public School objected to the proposed development due to significant information shortfalls in the Amended EIS, including the source of waste, human health, particularly that of children, sorting of the waste feedstock and how the school would be compensated for installing filtration systems on air conditioners. Concerns were also raised regarding the accessibility of monitoring information in order to determine the safety of children playing outside.

National Toxics Network (NTN) objected to the proposed development on the basis the development does not have a 'social licence' and faces significant community opposition, the lack of community consultation, inadequate justification, invalid comparisons with facilities in Europe and changes in international waste management policies with respect to energy from waste. Other concerns included inadequate emergency and fire management planning and human health risks. Comments were also provided on the need for the NSW Government to move toward zero waste strategies and policies.

The **Parramatta Climate Action Network** objected to the proposed development on the basis the burning of fossil fuel based materials such as plastic and wood is not considered 'green and renewable energy source', air quality impacts, proximity to residential areas, human health impacts and impacts to biodiversity.

McKees (on behalf of Pepkor South East Asia) objected to the proposed development as the Applicant failed to notify them of the proposal, despite being within 500 m of the development site, the potential health and safety impacts of the facility on their employees and the productivity of their distribution centre. Should the proposed development proceed, McKees recommended the Applicant be required to undertake appropriate monitoring and shut down procedures. Concerns were also raised regarding a lack of catastrophic modelling and the potential for traffic and noise impacts.

The Colong Foundation for Wilderness Ltd objected to the proposed development as the proposed facility would pollute Sydney's air, create toxic solid wastes and undermine zero waste strategies. Concerns were also raised regarding the proximity of the proposed facility to Prospect Reservoir, inconsistencies with international policies on the elimination of dioxins and furans from the environment, management and disposal of contaminated waste ash, the inappropriate incineration of resources as opposed to recycling and product reuse.

Greenpeace objected to the proposed development as it considers incineration is an inappropriate response to the 'waste crisis' and will lead to dangerous emissions with potential human health impacts. Greenpeace also indicated its support for the waste hierarchy as an approach to dealing with waste.

Karma Waters objected to the proposed development on the basis of poor assessments, poor testing, miscalculations and the cumulative and detrimental effect on human and environmental health. A number of technical queries were also raised with respect to the Applicant's HHRA.

Mulgoa Valley Landcare Group objected to the proposed development on the basis of increased truck movements, insufficient information regarding the disposal of carbon and methane, unreliable predictions of health and environmental impacts and an insufficient assessment of cumulative impacts.

The **Starlights Netball Club** objected to the proposed development on the basis of air quality impacts.

Hillsong Connect Group objected to the proposed development.

IGGC Pty Ltd provided comments regarding the veracity of the soil and water management assessment.

WSROC submitted a late submission to the Department. WSROC objected to the proposed development on the basis of the reasons set out in Council's submissions.

General Public

A total of 965 submissions were received from the general public, of which 949 objected, 14 provided comment and two expressed their support. Key concerns raised in the submissions included:

- **human health risk**, including the impact of pollutants on human health, predicted unacceptable risk to human health for a breastfeed infant, dioxins, delayed onset of health issues and children's health
- **suitability of the site,** including proximity to sensitive land uses, proximity to Prospect Reservoir, scale of the facility and the suggestion of an alternative site location outside of Sydney
- **air quality impacts,** including the adequacy and feasibility of mitigation measures, uncertainty of the emissions profile, cumulative impacts, management of nano-particles (particulates smaller than $PM_{2.5}$), increase in emissions during a shut-down event, impacts on ground level ozone, emissions produced by additional vehicles and smoke and smog
- **impacts on the environment and biodiversity,** including impacts on endangered ecological communities and vulnerable species, contamination of soil and water by pollutants, site contamination and the contribution to climate change from greenhouse gases
- **odour,** including the cumulative impact of odour, design of facility to prevent odours from being released and odour from fumes
- **traffic,** including the impact of additional vehicles on congestion, traffic safety and the use of old traffic data for traffic modelling
- **source and composition of waste**
- **noise,** including imapcts from 24 hour operations, construction noise, air conditioning unit noise and traffic noise
- **insufficient information and accuracy of technical reports** regarding emissions modelling, storage and disposal of residual ash, human health risk, soil and water contamination, failure to respond to the Director General's Requirements, worst case scenarios and flood management
- **visual impacts**, including light impacts and impact of the stack.

A breakdown of the percentage of submissions in which these matters were raised is provided in **Figure 11**. An indicative representation of the location of all objectors is shown in **Figure 12** and those objectors within a five km radius of the site is shown in **Figure 13**. The Department has considered and assessed the matters raised in public submissions in **Section 6** of this report.

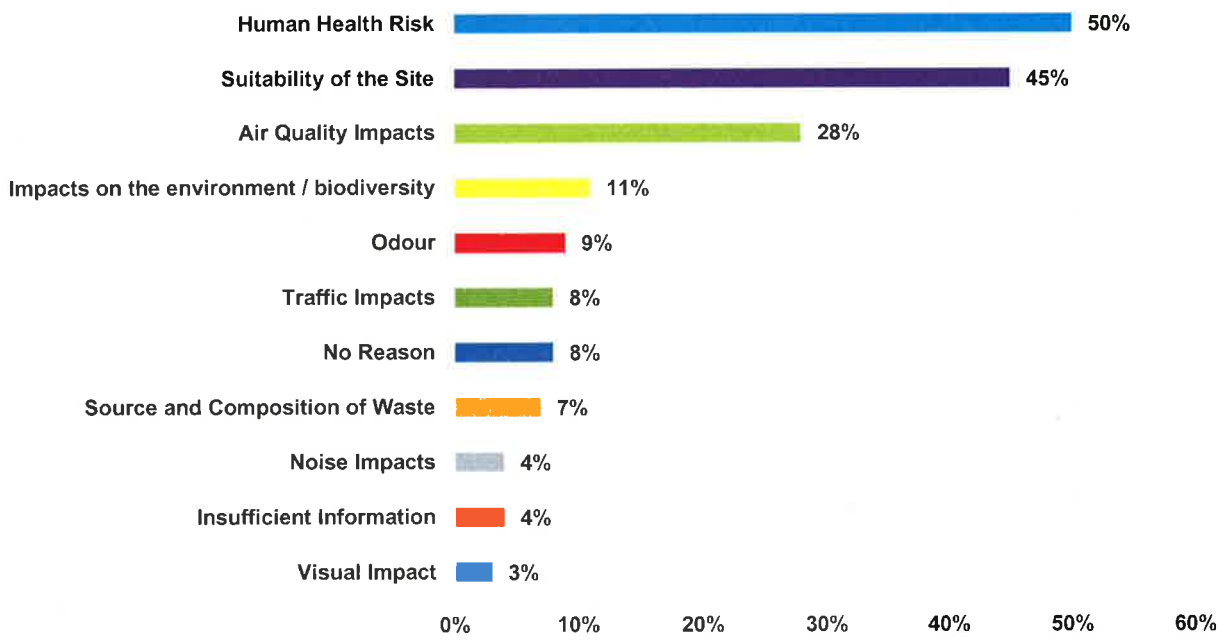

Figure 11: *Issues raised in community submissions*

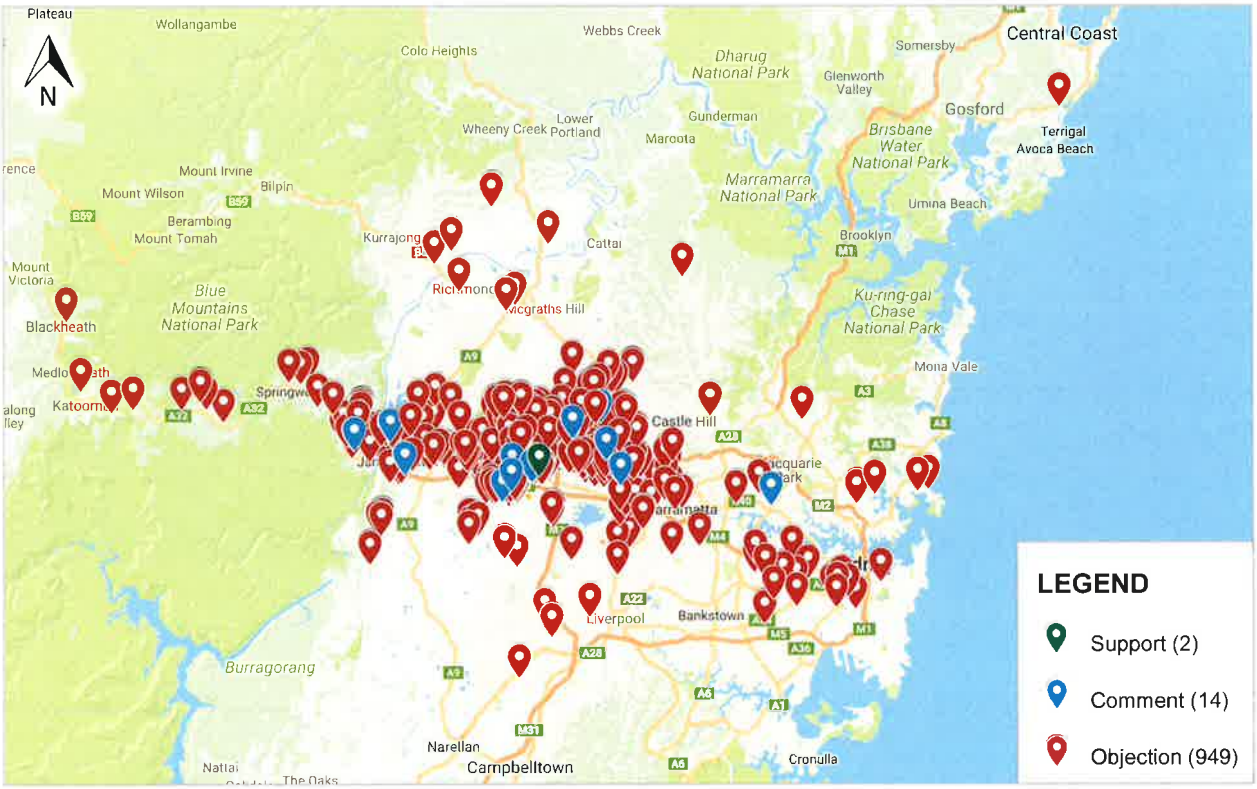

Figure 12: *Indicative location of all objectors*

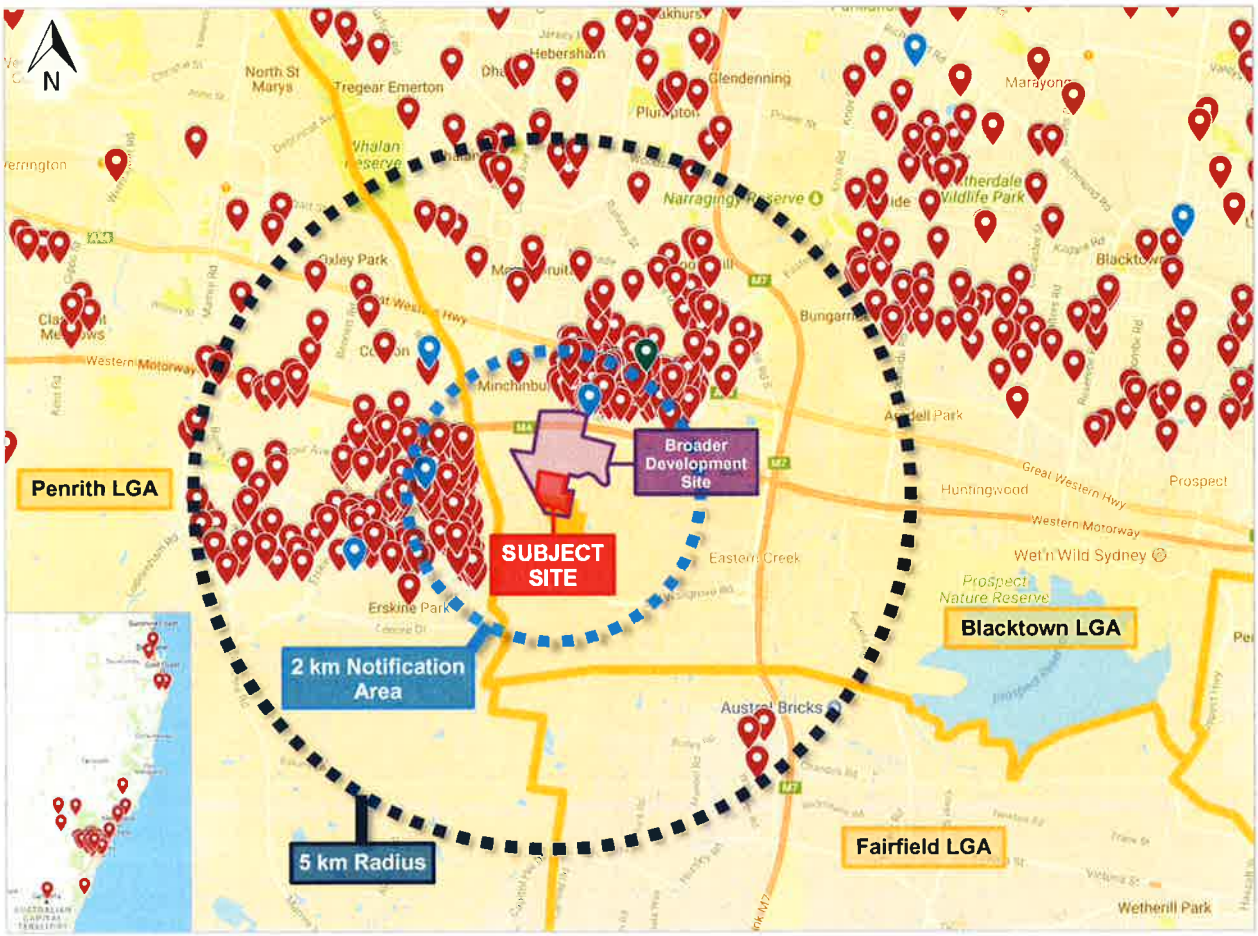

Figure 13: *Indicative location of objectors within a five km radius of the site*

Independent Expert Reviews

ARUP identified several fundamental technical queries which needed to be addressed to determine whether the facility meets the requirements of the Policy. ARUP recommended the Applicant be required to address the queries raised and provide evidence-based responses. Key concerns related to the lack of a reference facility[5] treating a similar design fuel mix, insufficient detail regarding the composition and source of the proposed waste feedstock, how the waste will be processed through the facility and how the proof of performance tests and procedures will be conducted, including training requirements and qualifications of operational staff.

EnRisks advised several key concerns remained with the revised HHRA, including uncertainty in the makeup of the feedstock, inconsistencies in the modelled ground level concentrations between the 2015 and 2016 versions of the HHRA, and insufficiencies in the emission scenarios to demonstrate the facility poses an acceptable risk at the regulatory limits. EnRisks concluded the HHRA submitted with the Amended EIS does not provide a robust assessment of risk for the proposed facility.

Social Media
The proposed facility has also drawn attention within social media. A Facebook page has been created by key active local residents, called 'No Incinerator for Western Sydney'. The page provides updates on proposed community meetings, project updates, media articles regarding the proposal and/or the Applicant and details of any presentations given by members of Parliament or debates or speeches given in NSW Parliament.

Petitions
On 9 July 2017, the leader of the NSW Opposition Leader, Mr Luke Foley MP, called for residents to sign a petition against the proposed facility. On 6 February 2018, Ms Prue Car, MP. tabled this petition in State Parliament with around 12,000 signatures. The petition opposes the development on the basis of unacceptable air quality and human health impacts and the lack of suitability of the site. The petition was discussed in NSW Parliament on 15 February 2018. The Minister responded to this petition on 12 March 2018.

A second petition was tabled on 13 February 2018 by Mr Jeremy Buckingham MLC, with 10,668 signatures raising the same concerns and opposing the proposed development.

On 11 July 2017, the Member for Mulgoa, Ms Tanya Davies MP, also announced she started a petition against the facility. This petition calls on the Commission to reject the application.

5.3. Response to Submissions on Amended EIS

On 14 December 2017, the Applicant provided an RTS on the issues raised during the exhibition of the development (see **Appendix F**).

The RTS included amendments to the proposal, an updated Project Definition Brief and revisions to the supporting technical reports. The key amendment was a reduction in the scale of the facility to only half that originally proposed. The RTS confirmed the Applicant seeks development consent for construction and operation of Stage 1 of the energy from waste facility only with a capacity to thermally treat up to 552,500 tonnes per annum of residual waste fuel. The construction and operation of Stage 2 of the facility to would be the subject of a separate future development application. Other key amendments included:

- reconfiguration of laydown areas to reduce vegetation removal by 2.32 ha (from 3.16 ha to 0.84 ha)
- a revised ecological offset strategy
- revised civil and stormwater management plans
- an amended subdivision plan and
- a revised Statement of Commitments.

Additional information provided in the RTS included:

- waste audit reports which confirm the waste fuel types and their fractional composition and chemical analysis
- an assessment of waste sources and availability for now and over a 25-year time horizon to 2041

[5] A 'reference facility' is a fully operational plant using the same technologies and treating like waste streams in another similar jurisdiction.

- details of comparable reference facilities to compare the proposed technology, scale of facility and feedstock composition
- management of asbestos
- further scenario modelling of additional operating scenarios under upset conditions and refinement of previously modelled scenarios.

The RTS was made publicly available on the Department's website and was provided to key government authorities to consider whether it adequately addressed the issues raised. A summary of their responses is provided below:

- **Blacktown City Council** requested the application be refused as the application does not meet the Director General's Requirements, the findings from the Parliamentary Inquiry have not been released, the Applicant has no social licence to operate, there are potential air quality impacts, there are information gaps in the RTS and the proposed development is prohibited development (as it does not meet the IN1 General Industrial zone objectives).
- **Penrith City Council** raised a number of concerns regarding the potential impacts on human health and the environment, air quality and odour impacts, aviation impacts, site suitability, notification and advertising. Given the extent of unknown potential impacts Penrith City Council recommended the application not be supported.
- **EPA** advised the proposal as presented in the RTS is inconsistent with the EfW Policy as the Applicant has failed to provide a representative facility burning the same types of waste, it proposes to burn potentially hazardous waste from car and metal recycling (known as floc waste), the facility will not operate at the required temperature to ensure the complete incineration of harmful compounds, such as dioxins and furans, and the volume of waste required to justify the development and sustain its operation is likely to undermine higher order resource recovery activities. EPA also provided comments on air quality, greenhouse gas and human health risk.
- **NSW Health** advised, on the basis of the advice from the independent technical experts regarding the inability of the Applicant to nominate an appropriate representative facility burning the same types of waste fuel, it was unable to support the proposal in its current form as it was unable to fully determine the proposed facility's actual or potential impact on human health.
- **DIRD** confirmed approval as a controlled activity was not required and reiterated its recommendation to consider *Guideline C, Managing the Risk of Wildlife Strikes in the Vicinity of Airports*
- **DPI** advised all matters of regulatory interest had been adequately addressed. Conditions of consent requiring preparation of a Water Management Plan and groundwater management were recommended
- **OEH** noted the Applicant proposes an offset of 18.9 credits for the amended proposal and recommended these credits be purchased and retired prior to impacts occurring and offsets should be like-for-like. OEH also recommended that the remaining RFEF on the site be biobanked to provide protection and management of this vegetation in perpetuity
- **RMS** requested additional information regarding the SIDRA traffic modelling. This information was provided to the RMS for comment.
- **AirServices** reiterated their previous comments that no impact was identified to current airspace procedures and communications/navigation/surveillance facilities. No guarantees were given with regard to proposed future approach and departure procedures at Western Sydney Airport.
- **Endeavour Energy** provided recommendations and comments to give the Applicant further advice and information regarding the existing and required electricity infrastructure for the proposed development.
- **Transgrid** provided comment on the proposed connection to the high voltage electricity network and confirmed that connection to the network is feasible.

Although the RTS was not publicly exhibited, a total of 38 submissions were received on the proposed development after it was made publicly available on the Department's website. This included 11 submissions from public authorities, submissions from Allens on behalf of Jacfin, National Toxics Network, Mulgoa Landcare and 24 submissions from the general public. All submissions received from the public and special interest groups raised concerns and objected to the proposed development.

Independent Expert Reviews

ARUP advised the methodology used by the Applicant to determine the total volume of residual waste fuel to justify the scale of the facility is inappropriate as it includes double counting, incorrect application of the EfW Policy's resource recovery criteria and inclusion of ineligible wastes. ARUP also advised the waste that is currently being operationally processed at the nominated reference facility, Ferrybridge Multifuel 1 in the UK, comprises a different waste stream than that proposed in the design fuel mix for the proposed facility. As such, ARUP advised the proposal is inconsistent with the EfW Policy.

EnRisks advised the Applicant's HHRA had been carried out using appropriate methodologies and relevant operating scenarios. The results indicate the total risk estimates for the three chronic (long-term) health risk scenarios are compliant with the relevant guidance on "acceptable" risks. However, as the proposed design fuel includes the use of waste streams that differ from the nominated reference facilities (in particular, Ferrybridge in the UK) which represent the 'expected' operating scenario (Scenario 1), this limits confidence that the in-stack concentrations from the burning of those wastes which have been used in the Applicant's risk assessment, are appropriate. The waste streams in the Applicant's proposed design fuel mix may result in higher levels of critical pollutants already present in the emissions, new pollutants that are not already covered in the risk assessment or the emissions could be within the range presented for the expected case. Therefore, the risk assessment may not be appropriate or sufficiently conservative.

The Department has considered the issues raised in submissions, the RTS and the supplementary concerns raised, and the independent expert reports in its assessment of the development.

5.4. Department's Consideration of Submissions

Table 8 summarises the Department's consideration of the three main key issues raised by the public and special interest groups, with reference to the relevant sections of this report where the issue is evaluated in detail.

Table 8: *Department's response to issues raised in submissions from the general public*

Concerns raised	Department comments
Human health risk	• The Department has assessed the Applicants HHRA and considered the potential risk to human health as a result of the development. Having regard for the advice from its independent expert, NSW Health, the EPA and the concerns raised by the public, the Department is not satisfied the HHRA provides confidence in the potential impacts of the development on human health on the community of Western Sydney.
Suitability of the site	• Given the uncertainty around the air emissions from the proposed facility and the potentially unacceptable risk to human health, the planning setting of the proposal in close proximity to densely populated residential areas, schools, childcare centres, retirement villages and employment areas, presents an unacceptable risk.
Air quality impacts	• There is uncertainty regarding the actual performance of the facility, the potential emissions and its ability to achieve best practice emissions control. • Given the existing poor background air quality in Western Sydney, this facility may make a significant additional contribution to the already high concentration of these pollutants in the airshed. As there is uncertainty around the pollutants that may be present in the emissions and the concentration at which these would be emitted, the calculated health risk estimates may be higher than predicted and unacceptable. The actual risk is unknown. • A precautionary approach is recommended due to the lack of scientific certainty around the composition and concentration of chemicals in the stack emissions and the concentrations at which these pollutants would be present at ground level, potentially being inhaled or ingested by those people living or working in the vicinity of the proposed development.

6. ASSESSMENT

The Department's assessment of the DA has been undertaken in accordance with the EP&A Act. The relevant matters for consideration in determining the application are:

- the provisions of relevant EPI's
- the EP&A Regulation
- the likely impacts of the DA, including environmental impacts on the natural and built environment, and social and economic impacts in the locality
- the suitability of the site for the development
- submissions made in accordance with the EP&A Act or the EP&A Regulation
- whether the DA is in the public interest.

The Department acknowledges the proposed development provides broad environmental and economic benefits, including greenhouse gas savings from reduced volumes of residual waste being sent to landfill and the recovery of energy from waste. However, the development must be assessed on its merits on a case by case basis having regard to the matters for consideration under section 4.15 of the EP&A Act.

The Department visited the site and met with the Applicant and its consultants on a number of occasions and considered the Applicant's EIS, Amended EIS and RTS and advice from its independent experts, ARUP and EnRisks. The Department has considered the submissions made by government authorities, special interest groups and the public during exhibition of the EIS and Amended EIS and following review of the RTS.

The Department, independent experts and other government authorities repeatedly requested additional assessment information from the Applicant and asked a number of questions about the proposal throughout the assessment period, in an effort to fully address the key issues and resolve outstanding concerns. Despite two significant amendments to the DA and multiple revisions to the key supporting technical studies, the Department and other government authorities consider there are a number of outstanding issues that remain unresolved. The Department considers the key assessment issues are:

- inconsistency with the EPA's *Energy from Waste Policy Statement* (2015)
- human health risk
- issues raised in submissions
- the public interest.

These issues are discussed throughout this section of this report.

The Department considers the further amendments made to the proposal as described in the RTS may have reduced the environmental impacts of the original two-staged proposal. The Department acknowledges some of the environmental impacts of the development (e.g. noise, traffic, water, biodiversity, soils, etc.) may be able to be managed, mitigated or offset to achieve an acceptable level of environmental performance. However, the Department considers that even with the proposed amendments and the implementation of management, mitigation and offset measures, the proposed development is inconsistent with the EPA's EfW Policy.

The Department, EPA and the independent experts do not have sufficient confidence in the performance of the facility and the air quality and human health impacts. Based on the information presented by the Applicant, the potential risk to human health and the environment is unknown. A precautionary approach is therefore recommended. This position is supported by the EPA, NSW Health, the Department's independent experts, the local councils and the nature and overwhelming number of submissions opposing the development.

Consequently, following its assessment of the proposal, and given its proximity to densely populated urban areas in an already constrained airshed, the Department considers the potential air quality impacts and unknown risks to the health of the local community outweigh its benefits. The Department cannot support the development in its current form and, on balance, considers it is not in the public interest.

6.1. Inconsistency with the Energy from Waste Policy Statement (2015)

The EfW Policy is important for the Department to consider as it is the primary policy in NSW which governs the assessment and consideration of energy from waste facilities. It provides specific key requirements to assess the performance of an energy from waste facility to ensure the protection of air quality and human health and to determine if a proposal is in the public interest, which are all matters required to be considered by a consent authority under section 4.15 of the EP&A Act.

Any inconsistency with the requirements of the EfW Policy reduces confidence in the performance of a facility and its ability to meet the required emission limits. As such, any inconsistency with the EfW Policy may result in an energy from waste facility generating harmful emissions of air pollutants and presenting an increased risk to human health. While the recovery of embodied energy from waste and the diversion of waste from landfill are positive outcomes for the community and environment, these outcomes are contingent on ensuring that energy recovery proposals do not increase the risk of harm to human health or the environment.

As the Applicant's proposed waste feedstock is not considered an 'eligible waste fuel'[6], as defined by the EfW Policy, the Applicant was required to demonstrate it could meet the EfW Policy's requirements for an

[6] 'Eligible waste fuels' are waste or waste-derived materials considered by the EPA to pose a low risk of harm to the environment and human health due to their origin, low levels of contaminants and consistency over time.

'energy recovery facility'[7]. This includes demonstrating the facility would use current international best practice techniques, meet a thermal efficiency criterion of capturing at least 25% of energy generated as electricity and certain technical criteria, such as:

- a temperature and residence time requirement of 1,100°C for two seconds in the combustion chamber for the destruction of harmful compounds, including dioxins and furans
- continuous monitoring of emissions to provide the EPA with 24-hour real time feedback
- proof of performance trials to demonstrate compliance with air emissions standards
- waste feed interlocks to prevent waste from being fed into the facility if the required temperature has not been reached
- specific chemical compositional requirements for bottom ash and slag
- an air quality impact assessment in accordance with relevant EPA guidelines.

The EfW Policy also requires energy recovery facilities to only receive residual waste from bona-fide resource recovery operations that meet the resource recovery criteria outlined in the EfW Policy. The criteria establish maximum percentage limits of residual waste allowed for energy recovery for each type of waste stream, including MSW, C&D, C&I, residuals from source-separated waste and separated wastes (e.g. waste wood, textiles, waste tyres, biosolids and source-separated food and garden organics). For example, for a facility processing mixed C&D waste, up to 25% by weight of the waste stream received at a processing facility is allowed to be used for energy recovery. For a facility processing mixed C&I waste, the percentage limit is 50% of the waste stream received for processing.

A further requirement of the EfW Policy is for energy recovery facilities to use proven technologies that are well understood and capable of handling the expected variability and type of waste feedstock. This must be demonstrated through reference to fully operational plants using the same technologies and treating like waste streams in other similar jurisdictions. This is known as a 'reference facility'. The reference facility requirement is a key aspect of the EfW Policy as it provides confidence in the performance of the facility and demonstrates the proposed emissions limits can be met. This ensures the protection of air quality and human health.

6.1.1 Applicant's Assessment Against the Energy from Waste Policy Statement

In order to demonstrate consistency with the EfW Policy, the Applicant provided an assessment of the proposal against the technical, thermal efficiency and resource recovery criteria for an 'energy recovery facility' as part of the EIS. This included a review of the proposed emissions technology against the European Commission's *Reference Document on the Best Available Techniques for Waste Incineration* (August 2006) (BREF) to demonstrate the proposed design would incorporate best practice techniques.

After reviewing the EIS, the Department's independent expert, ARUP, advised the Applicant it had not provided sufficient information to allow a full technical assessment of the technology to be undertaken to determine whether the application complied with the requirements of the EfW Policy. In response, the Applicant provided a revised assessment in the Amended EIS. Following a review of this revised assessment, ARUP raised several fundamental key questions which it considered the Applicant needed to address to enable a thorough and complete assessment against the EfW Policy. These queries related to:

- the need to provide a reference facility
- material availability throughout the life of the development in accordance with the EfW Policy criteria
- material composition
- proof of performance.

To further support its assessment, the Applicant provided additional information in an attempt to address these queries as part of the RTS. This included a comparison of the proposed facility against eight European (Germany, United Kingdom and Spain) reference facilities to compare technology, size of facility, waste feedstock composition and the waste stream net calorific value (NCV). This required the Applicant to carry out independent waste audits on the proposed waste feedstock to determine its chemical composition. The results of these audits were included as part of the RTS. This enabled a direct comparison of the chemical waste composition for the proposed facility with the range of waste compositional data across the Applicant's eight nominated reference facilities.
In response to a request from ARUP, specific chemical compositional design fuel data for each of the eight

[7] An 'energy recovery facility' is a facility that thermally treats a waste or waste-derived material that does not meet the definition of an eligible waste fuel. These facilities must be able to demonstrate that they will be using international best practice techniques.

reference facilities was provided to the Department to supplement the broad scale reference facility comparison presented in the RTS. This enabled ARUP to undertake a more refined analysis of the reference facilities' design data against the proposed design waste fuel.

The Applicant considers the existing energy from waste facility in West Yorkshire in the United Kingdom, known as Ferrybridge Multifuel 1, is directly comparable in terms of plant size, fuel capacity, furnace and air pollution control technology and waste fraction components and as such nominated this as its reference facility. This facility was commissioned in 2015 and is operated and maintained by HZI, which is the same technology provider for the proposed development at Eastern Creek. A comparison of these facilities utilising the additional design fuel data requested by ARUP is provided below in **Table 9**.

Table 9: *Reference Facility Comparison (based on design fuel)*

	Ferrybridge	**Eastern Creek**
Capacity	2 x 256,500 waste lines	2 x 276,250 waste lines
Net Calorific Value (MJ / kg)	13.50	12.30
Furnace technology	Moving grate	Moving grate
Air Pollution Control	Semi dry (lime)	Semi dry (lime)
Electricity Generation	68 MW	68.7 MW
Design Waste Fuel Composition		
Carbon	35.6%	31.53%
Hydrogen	5.2%	4.2%
Nitrogen	0.6%	0.71%
Sulphur	0.2%	0.18%
Chloride	0.5%	0.23%
Oxygen	25.1%	20.02%
Ash	12.8%	21.7%
Water	20.0%	21.43%
Total	**100.0%**	**100.0%**

As part of the RTS, the Applicant also provided an analysis of the available residual waste feedstock for the proposed facility to demonstrate the source, volume and composition of the feedstock complies with the resource recovery criteria of the EfW Policy and to justify the size and throughput of the proposed facility. The RTS estimates the amount of residual waste potentially available for energy recovery from existing and planned Genesis facilities and in the NSW Metropolitan Levy Area (MLA)[8]. On this basis, the Applicant identifies a total of 179,397 tpa from existing facilities, 373,103 tpa from planned Genesis facilities and another 1,625,000 tpa of potential eligible tonnes that exists in the MLA.

The methodology applied in the RTS includes an estimate of residual waste available for energy recovery across the entire MLA for each type of waste stream (i.e. C&I, C&D) against the resource recovery criteria specified in the EfW Policy, essentially utilising these percentage limits as targets (i.e. a total allowance). Data was sourced from a range of data sources including publicly available *State of the Environment* (2015) data and NSW EPA 2013-2014 C&I disposal audit data.

The Applicant's assessment concluded the proposal meets the requirements of an 'energy recovery facility' and satisfies all the required technical, thermal efficiency and resource recovery criteria of the EPA's EfW Policy. The Applicant concludes all relevant design parameters of the proposed facility are well within the eight comparable reference plants which are successfully operating in Europe and is directly comparable with the Ferrybridge facility with respect to plant size, fuel capacity and the design fuel waste fraction components. Therefore, the Applicant considers the proposed technology is suitable as it exceeds the BREF requirements and would be utilising best practice emissions technology which is proven, well understood and capable of handling the expected variability and composition of waste feedstock.

6.1.2 Issues Raised in Submissions

The EPA has consistently raised concern regarding the proposal's inconsistency with the EfW Policy. The EPA maintained this view following its review of the RTS. The EPA considered the RTS did not adequately demonstrate compliance with the following requirements of the EfW Policy:

1. **Reference facility**: the nominated reference facility, Ferrybridge, does not treat 'like waste streams'

8 The MLA comprises the Sydney metropolitan area, the Illawarra and Hunter regions, the central and north coast LGAs to the Queensland border as well as the Blue Mountains, Wingecarribee and Wollondilly LGAs.

2. **Floc waste**: floc waste has the potential to exhibit hazardous waste properties and characteristics. Facilities proposing to thermally treat hazardous waste are excluded from the EfW Policy
3. **Temperature requirements**: the temperature and residence time requirements for the destruction of harmful compounds, such as dioxins and furans, will not be reached (> 1,100^{0}C for more than two seconds)
4. **Resource Recovery Criteria**: the methodology used to estimate the amount of residual waste available for energy recovery in the MLA is inappropriate and does not adhere to the waste hierarchy.

Council raised concern the RTS does not contain sufficient information to determine how the Applicant will confirm compliance with the EfW Policy resource recovery criteria for the C&I and C&D residual waste fuels received from third parties where these wastes will be mixed and processed on site. This matter was raised by Council in its comments on the original EIS and Council considers this has not been adequately addressed in the RTS.

The source and composition of waste was raised in public and special interest group submissions on the Amended EIS. Concern was also raised regarding how the waste feedstock would be managed and screened when received at the facility. Some submissions raised the lack of consistency with the waste hierarchy and the lack of any comparable plants due to the scale of the facility.

6.1.3 Department's Independent Expert Advice

The Department's independent expert, ARUP, was engaged to provide advice throughout the assessment, identify information gaps in the Applicant's documentation and ask key fundamental questions about the proposed technology and its consistency with the EfW Policy.

This work, in conjunction with advice from the EPA's technical and policy experts, resulted in two amendments to the DA and a number of revisions to the Applicant's assessment against the EfW Policy requirements and the project definition brief (the facility's key design parameters), ultimately resulting in the provision of the Applicant's RTS. The RTS included a significant reduction in the scale of the facility, additional information regarding the Applicant's assessment against the EfW Policy, (including reference facilities and the source, availability and composition of the waste feedstock), a revised design fuel mix and project definition brief, a more refined waste availability model and substantial amendments to the supporting technical reports.

As part of its consideration of the RTS, ARUP considered the proposal against the requirements of the EfW Policy, focusing on the technical, thermal efficiency and resource recovery criteria, the use of international best practice techniques as specified in the BREF document as well as the requirement for a fully operational reference facility. A copy of ARUP's detailed review can be found in **Appendix I** of this report.

Consistent with the EPA's views, ARUP advised that based on the information presented in the RTS and all other information presented by the Applicant to date, the proposal is not compliant with the EfW Policy.

The matters raised by the EPA and ARUP regarding consistency with the EfW Policy are discussed in more detail below.

Operational Reference Facility

The EPA advises the need to demonstrate a fully operational reference facility is a key element of the EfW Policy. It provides a means of assessing whether proposed energy from waste technologies are proven and capable of safely handling waste feedstock material and provides confidence in the performance of the facility and its ability to meet the nominated emission limits. The EPA considers the reference facility requirement is one means of providing evidence (in conjunction with air emissions modelling and human health risk assessment) to assess potential risks to human health, and minimise any potentially harmful emissions, by-products and residues. The failure to address the reference facility requirements increases the uncertainty of the medium to long-term human health and environmental risks posed by this facility.

ARUP concurs with the Applicant that the Ferrybridge facility in the UK is comparable to that of the proposed development in terms of the technology proposed, throughput, the compositional analysis (presented in **Table 9**) and the waste stream NCV.

However, on a direct comparison based on the waste types in the design fuel mix, ARUP and the EPA advised the proposed development cannot be considered 'like' to the Ferrybridge facility. The majority (60%) of the Ferrybridge design fuel mix is derived from Refuse Derived Fuel (RDF), which in the UK,

ARUP advises is sourced primarily from MSW and C&I waste. RDF is not part of the proposed feedstock for the Eastern Creek facility. A comparison of the design waste fuel types is provided in **Table 10** below.

Table 10: *Comparison of Waste Types*

	Eastern Creek proposed design fuel mix	**Ferrybridge design fuel mix**	**Ferrybridge operational fuel mix**
RDF/SRF*	0%	**60%**	**82%**
Mixed C&I waste	**41%**	**30%**	0%
MRF residual	**12%**	0%	**18%**
Specified waste (largely wood waste)	**12%**	**10%**	0%
CRW (sourced from mixed C&D)	**20%**	0%	0%
Floc waste	**15%**	Only specific fractions	0%

* RDF/SRF are used interchangeably in the UK waste industry to describe fuel manufactured from the processing of waste. SRF refers to 'solid recovered fuel'.

Furthermore, ARUP and the EPA raised concern the information provided by the Applicant is based on design data only and does not represent the actual feedstock material used during the operation of the plant. The EPA advised a comparison of the operational data is required to satisfy the EfW Policy requirements for a 'fully operational' reference facility. The Applicant has not provided this information.

To assist with its assessment of the facility, ARUP submitted a request for information to the UK Environment Agency to obtain operational data for the Ferrybridge facility. This data, which was representative of the waste received over a 12-month period during 2016, showed the actual feedstock material being received at the Ferrybridge facility is primarily RDF (82%) and 'other wastes from the mechanical treatment of waste' (18%), as shown in **Table 10**. ARUP advised the 'other wastes' are most likely from MRF residual.

ARUP advised that in the UK, RDF is typically from MSW and C&I sources. The MSW portion of this waste stream (which is unknown) is clearly not directly comparable to the design fuel mix for the proposed facility as the Applicant does not propose to thermally treat any MSW. ARUP and EPA therefore concluded the Ferrybridge facility is not an appropriate reference facility as operationally it is not receiving the same types of waste fuel as the proposed development. Therefore, the proposed facility is not deemed compliant with the EfW Policy.

The EPA also concluded that as the waste types proposed at Eastern Creek are not of similar sources to that being received for thermal processing at the Ferrybridge facility, some uncertainty remains regarding the actual performance of the proposed facility and its ability to achieve the nominated IED emission limits.

Floc Waste

Facilities proposing the thermal treatment of potentially hazardous waste materials are not considered to be undertaking genuine energy recovery and are excluded under the EfW Policy.

Floc waste, which is the residue from the shredding of car and metal recyclables, is proposed to comprise up to 15% of the waste feedstock for the facility. The thermal treatment of floc waste may result in harmful air emissions and/or contaminants in ash and slag by-products which have the potential to cause harm if not properly managed.

As part of the RTS, the Applicant provided the results from a compositional waste audit of floc waste received at the Genesis landfill over the period of six days. The composition audit identifies the composition of floc waste as mainly characterised as *Fines* (58.1%). There is no explanation of what this category includes, or the potential for variability in the floc material over time.

The EPA advises floc waste can be highly variable and has the potential to exhibit hazardous waste properties and/or characteristics, depending on the source and processing of the material. The RTS does not provide adequate information about the source, composition and temporal variability of the floc waste for the EPA to be satisfied that it is not hazardous. The EPA also notes floc waste is not a permitted type of waste at the Ferrybridge facility, the Applicant's nominated reference facility.

As part of its consideration of this issue, ARUP obtained a copy of the environmental permit for the Ferrybridge facility from the UK Environment Agency. ARUP confirmed the permit does not allow for the

acceptance of floc waste of a similar composition and nature to what is being sought by the Applicant. ARUP concurred with the EPA that, given the high percentage of fines in the floc waste, it is possible the fines could contain hazardous material. ARUP and the EPA concluded floc waste is a potentially hazardous waste which makes up a significant portion of the Applicant's proposed design fuel (15%) and is an excluded waste under the EfW Policy.

Temperature Requirements

The EfW Policy requires an energy recovery facility to achieve a temperature of 850°C for a minimum of two seconds during the thermal treatment of the residual waste. If a waste has more than 1% of 'halogenated organic substances' (organic compounds such as plastics containing chlorine), the temperature must be raised to 1,100°C for at least two seconds.

Typical wastes with high chlorine content include wood waste containing wood preservatives or coating and various types of plastics such as plastic bags, bottles, polyvinyl chloride (PVC), as well as chemical disinfectants. The thermal treatment of these materials can cause harmful emissions of dioxins and furans, which can have acute and chronic health impacts (e.g. skin lesions, altered liver function and impairment of the immune and nervous systems).

The Applicant proposes to raise the temperature to 850°C for a minimum of two seconds during the thermal treatment of the residual waste as it is not proposing to treat waste with a chlorine content greater than 1%. It advised these types of wastes would be removed from the waste feedstock during its quality control processes for screening in-coming waste.

The EPA advised, given that C&D wastes and wood wastes comprise a high proportion of the proposed feedstock material, potential halogenated substances such as plastic wastes (comprised of PVC) would be present. These materials may result in chlorine levels exceeding 1% over time. The EPA considers the proposed development does not meet the temperature and residence time requirements (> 1100°C for at least two seconds) for the safe incineration of halogenated organic substances.

The Applicant considers it is unnecessary to meet the higher temperature requirements for the combustion of 'halogenated organic substances' as appropriate quality control processes would be employed to exclude waste containing PVC and other such materials from the waste streams. Furthermore, mechanical mixing of the waste in the waste bunker prior to incineration would ensure the concentrations of the fractions within different waste streams would be well homogenised when being fed to the combustion process.

To support its argument, the Applicant provided a copy of the 'Residual Waste Fuel Quality Assurance Procedures' for the Genesis Waste Recycling and Resource Recovery Facility at Eastern Creek. The Applicant states this addresses the quality control processes for the CRW waste stream for the proposed waste feedstock. However, the Applicant has advised the development of specific quality control guidance for the receipt of waste from the proposed C&I MRF at the Genesis facility and third-party resource recovery facilities is deferred to an unspecified later date.

The EPA is not satisfied the information regarding the proposed quality control processes is sufficiently detailed or robust enough to provide assurances PVC (and other waste containing halogenated organic substances) would be removed from the feedstock material. While the RTS claims the chlorine content of the facility would be maintained below 1%, the EPA does not have confidence the waste compositional audits and associated analysis conducted by the Application are sufficiently robust to demonstrate this could be achieved over time.

The EPA is not satisfied the Applicant has adequately justified the appropriateness of lower temperatures for the proposed facility and does not sufficiently demonstrate how risks associated with adopting the minimum temperature of 850°C would be appropriately managed. If chloride levels do not remain below 1%, the proposal would not meet this technical requirement of the EfW Policy and there is a risk of harmful compounds such as dioxins and furans in the stack emissions, increasing the risk to human health.

Resource Recovery Criteria

The EfW Policy's objectives in setting resource recovery criteria are to drive the use of best practice material recovery processes and ensure that only residuals from bona-fide resource recovery operations are eligible for use as a feedstock for an energy recovery facility.

ARUP carried out a detailed assessment of the Applicant's feedstock review in order to ascertain whether there is sufficient eligible waste feedstock available in the MLA that adheres to the Applicant's design fuel

mix, meets the requirements of the resource recovery criteria in the EfW Policy and is within the current or proposed Genesis operations. ARUP's assessment concluded the Applicant's assessment of the available residual waste fuel feedstock for the development is over-estimated for three reasons:

- the resource recovery criteria percentage limits have been applied to the total volume of residual waste in the MLA market, rather than on an individual facility basis, as required by the EfW Policy
- unjustified increases in waste streams at the Genesis facility
- double counting of feedstock sourced from the Applicant's operations and in the MLA market.

ARUP re-calculated the available residual waste eligible for energy recovery for the proposed design fuel mix utilising actual resource recovery rates, a conservative adjustment for increases in waste streams, exclusion of unacceptable waste streams (floc waste and C&D waste from Genesis Alexandria landfill) and discounting for any double-counting.

Based on a direct comparison to what is currently operationally processed at Ferrybridge (being waste from MSW and C&I sources), ARUP advised only the C&I waste fraction of the design fuel mix could be considered a like waste type. Taking this into account, this would translate into a maximum waste feedstock volume of 202,348 tpa based on the adjusted figures undertaken by ARUP's analysis. This is only 37% of the proposed waste volumes used to justify the scale of the proposed facility.

The EPA is of the view that the methodology adopted in the RTS is inappropriate and undermines the intention of the resource recovery criteria, as the Applicant has applied the percentage limits allowed for energy recovery to the total volume of residual waste across the MLA rather than to each individual processing facility as required by the EfW Policy. By applying the resource recovery criteria in this way, this would result in the diversion of waste currently being recycled to energy recovery. This is not appropriate as energy recovery is a lower order waste management approach in the waste hierarchy.

The EPA advises the percentage limits provided in the EfW Policy should only be applied to the residual wastes on an individual facility basis once the wastes have been processed or appropriately separated and higher order management options have been maximised at that facility. This will ensure that only materials which have gone through a bona-fide resource recovery operation are available for energy recovery.

To meet the requirements of the EfW Policy and estimate the available residual waste for energy recovery in the MLA, the EPA requires detailed, site-specific information for each generator, processor or facility providing residual waste for the proposed development. The resource recovery criteria should be applied to these sites individually to demonstrate the appropriate type and amount of waste is being used for energy recovery and in doing so, demonstrate compliance with the Policy and justify the scale of the proposed facility. This has not been provided.

The EPA considers the Applicant's assessment does not provide assurances that the appropriate types of waste would be available for the proposed facility and higher order waste management opportunities will not be undermined. This directly contravenes the EfW Policy.

6.1.4 Evaluation and Conclusion

The need for consistency with the EfW Policy was identified early in the assessment process as a key requirement. The Department provided considerable opportunity for the Applicant to address the concerns raised by ARUP, the EPA and other submissions through the Amended EIS and the amended application described in the RTS. The Department acknowledges the Applicant has progressively provided some of the additional information requested, particularly in relation to the source, volume and composition of the proposed waste feedstock and the requirement for a reference facility. However, based on the advice given by ARUP and the EPA, the Department is not satisfied key requirements of the EfW Policy have been adequately met. The Department's evaluation of these requirements is set out below.

Reference Facility

Despite multiple requests for the Applicant to provide details of a fully operational reference facility, the Applicant has not been able to provide sufficient information to demonstrate the nominated reference facility, Ferrybridge, is thermally processing a like waste stream to the proposed facility. Without a suitable reference facility, the EPA and ARUP have advised they cannot be confident in the performance of the facility and its ability to meet the proposed IED emission limits. As a consequence, the EPA and ARUP both conclude the Applicant has not complied with this requirement of the EfW Policy.

The Department concurs with ARUP and the EPA that Ferrybridge is not thermally treating a 'like' waste stream. The majority of the waste operationally being treated at Ferrybridge is RDF, which the Department

notes is from MSW and C&I sources. The Applicant is not proposing to treat any RDF or MSW. The Applicant's design fuel mix also contains a significant portion of fuel that is not being treated at Ferrybridge, including potentially hazardous floc waste (15%), specified waste (12%) and CRW (20%). As such, if the proposed design fuel mix is thermally treated at Eastern Creek, there is no certainty whether the emissions will be below levels that pose a risk of harm to the community or the environment. The composition and concentration of the emissions from the thermal treatment of the proposed design waste fuel are simply not known.

The Department therefore has significant concerns that without a suitable reference facility it cannot be confident the IED emission limits would be met and there is uncertainty regarding the potential long-term risks to human health and the environment. This is not acceptable given the proximity of the development to a densely populated area with numerous schools and childcare facilities.

Floc Waste
Insufficient information has been provided to confirm the source, composition and temporal variability of floc waste to be satisfied this material would not contain hazardous waste. The Department is concerned the potential for hazardous waste materials in floc waste presents uncertainty around the potential emissions from the combustion of such materials. In particular, having regard to the compositional variability of such waste over time and the high percentage of fines for which the composition is unknown.

As the nominated reference facility, Ferrybridge, is not permitted to receive floc waste, the Department is not satisfied the Applicant has provided sufficient data to demonstrate the combustion of this material (which makes up a total of 15% of the proposed feedstock) would not result in harmful emissions and/or contaminants in ash and slag by-products which have the potential to cause harm if not properly managed. Furthermore, facilities proposing to thermally treat potentially hazardous waste materials are not considered to be undertaking genuine energy recovery and are excluded under the EfW Policy. Therefore, the inclusion of this waste stream in the design fuel directly contravenes the EfW Policy.

Temperature Requirements
With respect to the temperature and residence time requirements, the Department has considered the advice from ARUP and the concerns raised by the EPA. The Department is not satisfied the Applicant has provided sufficient detail regarding how the Applicant's proposed quality control procedures would ensure materials containing halogenated organic substances would be excluded from the waste stream and therefore maintain chlorine levels below 1% as required by the EfW Policy. There is a risk that operation of the facility would result in the release of harmful compounds such as dioxins and furans over the life of the development, presenting a chronic risk to the health of the local community.

The Applicant has not committed to achieving the required temperature and residence time requirements for the complete thermal treatment of hazardous substances. Therefore, the Department considers this requirement of the EfW Policy has not been satisfied.

Resource Recovery Criteria
The Department has considerable concerns regarding the approach and methodology the Applicant has used to calculate the volume of waste feedstock which has been used to justify the need and scale of the proposed facility. As the EPA and ARUP have advised, by applying the resource recovery criteria as percentage limits across the entire MLA and not the actual resource recovery achieved on an individual facility basis, the Department agrees this undermines higher order resource recovery outcomes enshrined in the WARR Act and the EfW Policy. As such, the Department is not satisfied the Applicant has demonstrated compliance with the resource recovery criteria specified in the EfW Policy and has not adequately justified the scale of the proposed facility.

Conclusion
The Department has carefully considered the expert advice from ARUP and the EPA which have clearly advised the proposal is inconsistent with several key requirements of the EfW Policy. The Applicant has not adequately demonstrated how wastes that have the potential to generate harmful toxins such as dioxins and furans will be excluded from the waste stream and the proposed temperature and residence times are not sufficient to ensure their complete removal from the emissions. Furthermore, the inclusion of potentially hazardous waste streams such as floc waste, presents further uncertainty regarding the harmful compounds that may be present in the emissions and the inclusion of such waste streams directly contravenes the EfW Policy.

Having regard to ARUP and the EPA's advice, the Department considers the methodology used to calculate the total volume of residual waste in the MLA and justify the scale of the facility has the potential to result in waste being used for energy recovery rather than higher order resource recovery outcomes. This would directly contravene the overarching principles of waste avoidance and recovery enshrined in NSW State waste legislation. The Applicant has not adequately demonstrated a sufficient amount of appropriate waste feedstock is available to be thermally treated at the proposed facility and therefore has not justified the need for a facility of the scale proposed.

Furthermore, and most importantly, as the Applicant has not been able to identify an acceptable reference facility, the Department cannot be confident in how the facility will perform in the proposed location and at the scale proposed and whether the proposed emission limits can be met. The Department has significant concerns the proposal poses potentially unacceptable risks to human health and the environment, particularly given the proximity of the proposed development to a densely populated urban area and close to numerous schools and childcare facilities.

The Department's assessment concludes the Applicant has not satisfied a number of key requirements of the EfW Policy and has not demonstrated there will be no increase to the risk of human health and the environment. As such, the proposed development is considered to be inconsistent with the EfW Policy.

6.2. Human Health Risk

Clean air is fundamental to everyone's health and well-being, particularly to the health of children, the chronically ill and the elderly. Given the proximity of the development to densely populated urban areas and the significant number of sensitive receivers, including residential homes, schools, childcare facilities and retirement villages, confidence in the predictions of the potential risk to human health is fundamental.

The protection of human health is an important aspect of the EfW Policy and the POEO Act which set the framework to ensure that human health and the environment are protected from the inappropriate use of waste. The EfW Policy clearly states that the use of waste for energy recovery is contingent on ensuring any such proposals are achieved with no increase in the risk of harm to human health or the environment.

Emissions from the combustion of residual waste fuel at the proposed development have the potential to have adverse health impacts through various exposure pathways such as ingestion, inhalation or contact with skin, if not appropriately understood, managed and controlled.

The proposal involves the combustion of a mix of different types of waste fuel from various sources which may vary in composition and characteristics over time. This has the potential to result in a variable mix of chemicals in the emissions from the stack which are difficult to predict with certainty over the life of the development. This presents uncertainty about the ground level concentrations of these chemicals around the facility, where people reside and go to work and where children attend schools or childcare.

It is therefore critical that there is sufficient understanding of the types of waste proposed to be used, how these wastes are combined, controls on conditions inside the combustion chamber, how the emission stack has been engineered, the efficiency of the pollution control equipment and the dispersion of the emissions around the facility. Having a sufficient understanding of all of these aspects means the estimates of the ground level concentrations of chemicals can be made with an appropriate level of confidence. This provides a robust basis for the human health risk assessment and gives confidence in the health risk estimates in the assessment.

6.2.1 Applicant's Assessment of Human Health Risk

As part of the original EIS, the Applicant prepared a Human Health Risk Assessment (HHRA) in accordance with the *Environmental Health Risk Assessment: Guidelines for Assessing Human Health Risks from Environmental Hazards* (enHealth, 2012) (the enHealth Guidelines). The report provided a quantitative assessment of the risk to human health associated with the use of residual waste fuels in the facility.

Initial reviews of the HHRA by the Department's independent human health risk expert, EnRisks, and the EPA identified some fundamental issues with the assessment methodology. The Applicant submitted a revised HHRA as part of the Amended EIS to address these matters, however, the EPA and EnRisks advised a number of issues remained unresolved. NSW Health also advised it remained concerned about the potential for human health impacts from the facility. Following a number of discussions with the Applicant, EnRisks and the EPA, the Applicant subsequently submitted a further final revision of the HHRA as part of the RTS in an effort to address the outstanding concerns.

Air Quality Impact Assessment

To understand what the concentrations of chemicals in the emissions might be and how they are likely to be dispersed around the facility, the Applicant carried out an Air Quality Impact Assessment (AQIA), prepared in accordance with the EPA's *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* ('Approved Methods'). The assessment underwent a number of iterations during the course of the assessment of the proposal as a result of questions and concerns raised by the EPA and subsequent amendments made to the development application. The AQIA submitted as part of the RTS assesses the potential impacts associated with the operation of two combustion lines with emissions from the flue gas treatment systems for each line discharging to a single twin-flue stack.

For the purposes of the AQIA presented in the RTS, the Applicant has considered the locations identified in **Figure 14** as sensitive receptors. These are located within a radius of approximately three kilometres of the development site, and include both residential and non-residential developments. A total of 5,038 sensitive receivers were identified, including 4,945 residential receivers, six schools, six childcare centres, 78 industrial receivers, the Pinegrove Memorial Park Lawn Cemetery and the Prospect Reservoir. The closest residential receptors are located approximately 900 m to the west of the site on Swamphen Street and Blackbird Glen in the suburb of Erskine Park.

The local communities potentially impacted by the facility include the suburbs of Eastern Creek, Erskine Park and Minchinbury (see **Figure 14**). For the purposes of the HHRA, the Applicant identified a wide range of contaminants of potential concern (CoPC) including key contaminants such as carbon monoxide (CO), sulphur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), heavy metals, dioxins and furans, polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs). Human receptors considered comprised off-site residents, including schools, childcare centres and hospitals, and off-site commercial workers.

The AQIA and the HHRA as presented in the RTS have used modelled ground level concentrations for five operating scenarios to predict the potential impacts under normal (expected) and unusual (upset) conditions as well as the proposed regulatory scenario (IED Limits) and the worst case operating scenario under the POEO regulatory emission limits, as described in **Table 11**.

Table 11: *Emission scenario description*

Scenario	Description	Emissions Data Origin
1	Normal (expected) operating conditions	• in-stack testing data from existing reference facilities with the exception of metals • adopted metal in-stack concentrations based on UK Environment Agency metal stack emissions guidance
2	POEO Regulation emission limits (NSW regulatory limits)	• emission rates prescribed by Schedule 3 of the POEO Regulation for 'Electricity generation'
3	Upset conditions	• a ten-fold increase in the IED emission limit for those parameters with an IED limit (Scenario 4) • a ten-fold increase in the emissions relative to the 'Normal' scenario (Scenario 1) • adopted metal in-stack concentrations based on UK Environment Agency metal stack emissions guidance
4	IED regulatory emission limits	• emissions rates prescribed by the IED
5	Diesel generators	• equipment specification data representative of the type of technology to be used • two emergency diesel generator emissions combined with stack emissions operating under normal operating conditions (Scenario 1)

The Applicant advised the proposed technology for the facility is based on existing facilities in the United Kingdom (UK) and Europe and would incorporate international best available technology for flue gas treatment as specified in the European Union (EU) *Best Available Techniques (BAT) Reference Document on Waste Incineration* (2006) (BREF). The flue gas treatment is designed to meet the in-stack concentrations limits for waste incineration set by the EU IED, which are generally more stringent than those prescribed within the POEO (Clean Air) Regulations. The flue gas treatment system includes:

- Selective Non-Catalytic Reduction (SNCR) for reducing emissions of oxides of nitrogen (NOx)
- dry lime scrubbing for reducing emissions of acid gases, including hydrogen chloride (HCl) and SO_2
- activated carbon injection for reducing emissions of dioxins and mercury (Hg)
- fabric filters for reducing emissions of particulate matter (PM) and metals.

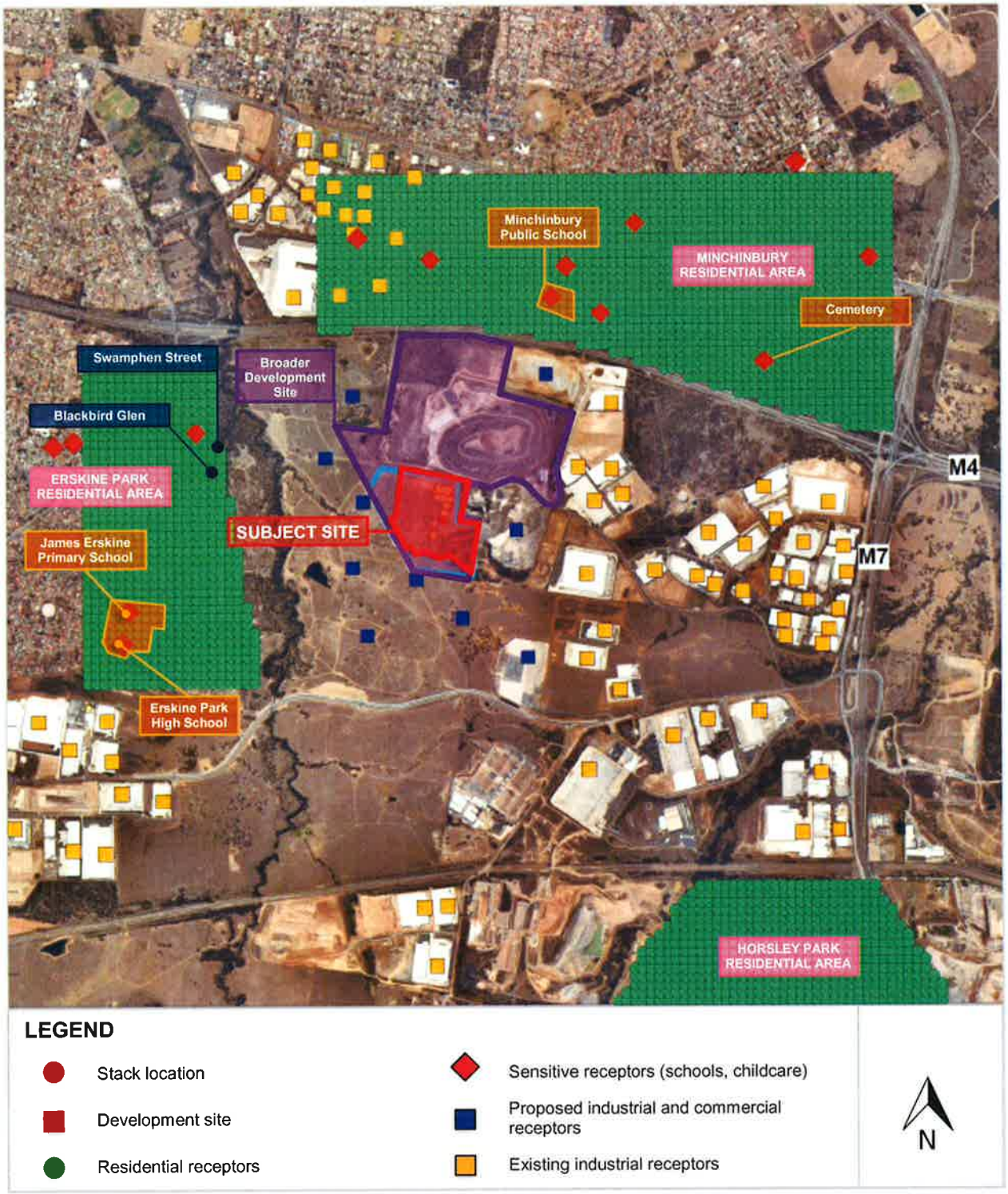

Figure 14: *Location of sensitive receivers*

The Applicant's AQIA assessment concluded the cumulative predictions for air quality impacts show there are no exceedances of the EPA ground level criteria when the emissions from the facility are added to the maximum background concentration for the expected operating conditions (Scenario 1), the IED regulatory scenario (Scenario 4) or the diesel generator scenario (Scenario 5).

With the exception of Beryllium (Be) when the facility is operated under the POEO limit scenario (Scenario 2), the AQIA demonstrated compliance with the EPA ground level assessment criteria for all air impurities when point source emissions are added to the background data for this scenario. The Applicant argues the emission concentrations for Beryllium used in the modelling were highly conservative, however, recommends the more stringent IED limits be adopted for any EPL for the facility as this reflects the facility's design specifications.

Human Health Risk Assessment

Utilising the results of the Applicant's AQIA, the HHRA compared predicted CoPC concentrations at or near receptor sites and at grid maximum locations[9] with acute and chronic Australian and international health based criteria and the EPA impact assessment criteria in the 'Approved Methods' guideline. The HHRA has been undertaken considering various exposure pathways, including inhalation, dermal contact and ingestion, which is known as a multiple pathway assessment.

The characterisation of human health risk involves a comparison of the calculated or estimated exposure against national Australian acceptable risk levels. For chemicals which have the potential to act as carcinogenic contaminants, the acceptable carcinogenic risk level is 1 in 100,000 (1×10^{-5}) (enHealth, 2012a). This does not imply certainty that one person will get the disease if 100,000 people are exposed, it is simply a way of expressing risk.

For all other contaminants, potentially unacceptable chemical intake or exposure is indicated if the calculated exposure level exceeds the tolerable daily intake (TDI) or tolerable concentration (TC) (i.e. greater than 1.0) (enHealth, 2012a). Where risk estimates are below the risk acceptability criteria, the risk is termed to be 'low and acceptable'. In other words, no further actions or assessment is warranted. Where the risk acceptability criteria are exceeded, further work is required to understand risk driving pathways and, or appropriate risk management measures may be recommended.

The Applicant's assessment of acute exposure for Scenarios 3 (Upset) and 5 (diesel generators) found that, with the exception of modelled NO_2 concentrations in Scenario 5, no other CoPC exceeded the adopted acute criteria. However, the Applicant's assessment concluded the potential acute human health risk associated with NO_2 exposure is unlikely to be realised due to the conservative nature of the assessment. No further analysis was undertaken.

The Applicant also calculated the chronic (long-term) health risk for each individual exposure pathway as well as the cumulative risk from all pathways for both an adult and a child. A risk calculation was carried out separately for an infant ingesting breastmilk. The Applicant's assessment concluded the potential risks to human health were considered to be 'low and acceptable' for most complete exposure pathways with the exception of the risk for off-site infants via the ingestion of breastmilk under the POEO Limit scenario (Scenario 2). This pathway was deemed to have a hazard index of 2.22, which exceeds the adopted acceptable hazard index of 1.0.

The Applicant argued the potential risk to an infant is considered unlikely to be realised as the proposed development is designed to meet the more stringent emission limit requirements of the EU IED (reflected in Scenario 4) and a number of conservative assumptions were made in the assessment.

Overall, the Applicant's assessment of chronic health risks concluded the cumulative risk for all scenarios were 'low and acceptable' for both an adult and a child. A summary of the cumulative total risk estimates for the Applicant's chronic health risk assessment is provided in **Table 12**.

Table 12: *Summary of Cumulative Total Risk Estimates*

		Threshold (non-carcinogenic) Risks		Non-Threshold (carcinogenic) Risks
Acceptable Limit		**< 1**		**< $1x10^{-5}$**
		Adult	**Child**	
1	Expected	0.13	0.15	$2x10^{-7}$
2	POEO Limits	0.44	0.52	$1x10^{-6}$
4	IED Limits	0.19	0.25	$3x10^{-7}$

6.2.2 Issues Raised in Submissions

With respect to the AQIA, the EPA advised the AQIA as presented in the RTS has generally been conducted in accordance with the 'Approved Methods' guideline and the majority of the outstanding air quality issues identified in the review of the Amended EIS have been satisfactorily resolved. Despite issues with the previous AQIAs, the changes in the predicted ground level concentrations were generally consistent with any changes in the model set-up or assumed emission concentrations. The EPA agrees the air quality

[9] The grid maximum is the location where the highest ground level concentration outside the boundary is located. This may be a location along the fence line of the facility or the road immediately adjacent to the facility rather than a location where people live or work. Adopting grid maximum concentrations ensures that the most sensitive receptor is being assessed with a 'worst-case' exposure point concentration.

modelling has made a number of very conservative assumptions regarding the emission concentrations of heavy metals such as Cadmium.

However, as the facility does not comply with the reference facility requirements of the EfW Policy (as discussed in **Section 6.1** of this report), the EPA was concerned the emissions used in Scenario 1 (Expected) are representative of facilities thermally processing a different waste stream to that proposed at the facility and therefore do not necessarily provide confidence the ground level concentrations for this scenario represent the expected results for the proposed facility, or whether the IED limits could actually be achieved. The EPA concluded there is uncertainty regarding the actual performance of the facility, the potential emissions and its ability to achieve best practice emissions control.

Throughout the assessment, NSW Health raised concerns about the inability to fully determine the proposed facility's actual or potential impact on human health. NSW Health has maintained this view despite the amendments made to the application and multiple revisions to the Applicant's AQIA and HHRA. Following its review of the RTS and the Department's independent expert's reviews, NSW Health has advised is it unable to support the proposal in its current form as it is still unable to determine the proposed development's actual or potential impact on human health.

The potential risk to human health was the primary issue of concern in the community submissions. Of the 949 public submissions objecting to the proposal, 485 (50%) submissions raised human health risk and 274 (28%) raised air quality impacts as reasons for their opposition. This included concerns about the impact of pollutants on human health, the prediction of unacceptable human health risks to a breastfed infant in Scenario 2 (POFO Limit), the potential impact of dioxins, the delayed onset of human health issues and the unknown impacts to the health of children over the life of the development. Air quality concerns included uncertainty of the emissions profile, increases in particulates and ozone and cumulative impacts.

The issue of human health was also raised in 12 (86%) out of the 14 special interest group submissions objecting to the development. Additionally, the two petitions signed by over 10,000 community members and tabled in NSW Parliament, raised the potential for long-term human health impacts as a result of increased emissions of ultra-fine particles from the proposed facility.

Council raised concern that in order to adequately undertake a risk assessment, and to ensure the development does not have adverse environmental impacts, the Applicant should undertake air quality monitoring for a period of one year prior to the plant operating, to obtain accurate localised baseline data. Council considered this to be vital to determine if the facility is adversely impacting on the air quality of the surrounding area and to ensure the proposed development does not impact on the health of the surrounding community. Council also acknowledged the concerns of the community regarding the risk to human health which was raised during a joint community information forum run by Council with the Applicant.

Penrith City Council raised concern at the potential for the EPA's ground level assessment criteria to be exceeded and the potential impacts on human health and the environment. Council recommended an independent assessment and review of the HHRA be undertaken and those experts reviewing the HHRA should be satisfied that any issues are fully addressed or a precautionary approach be taken. Penrith City Council also raised concerns about the Applicant's AQIA, the lack of a comparable reference facility and the proposed use of incineration technology in a highly populated area within the Sydney Basin which, due to its geography and associated meteorological conditions, is already subject to adverse air quality impacts.

6.2.3 Department's Independent Expert Advice

The Department engaged an independent health risk expert (EnRisks), in collaboration with the EPA, to review and provide advice on the HHRA and assist with the assessment of human health risk. EnRisks was engaged at the beginning of the assessment process and provided advice throughout the assessment and on each revision of the Applicant's HHRA.

EnRisks advised it was satisfied the assessment as presented in the RTS has used standard approaches as outlined in national guidance and has used exposure assumptions considered appropriate for Australia. EnRisks agreed with the Applicant's view that Scenario 3 and 5, which apply to upset or emergency situations, should only occur rarely, if at all, so they make a minimal contribution to long-term risk. EnRisks review therefore focussed on the Applicant's long-term (chronic) health risk assessment. EnRisks assessment of the Applicant's estimation of health risk is outlined in **Table 13** below.

Table 13: *Summary of EnRisks' Assessment of the Applicant's hazard risk estimates*

Scenario	Description	Margin of safety in risk estimate result	Acceptable (Y/N)	EnRisks Comment
1	Expected (based on performance of reference facilities)	10-fold	N	Margin of safety is not considered sufficient given the uncertainty in the pollutant mix and potential significant variability in the fuel composition
2	POEO Limit	2-fold	N	Margin of safety is not considered sufficient given uncertainties in the HHRA
4	IED Limit	4-5 fold	Maybe	Margin of safety may be acceptable depending on confidence in waste feedstock quality control, management and mixing

EnRisks was satisfied the total risk estimates for Scenarios 1, 2 and 4 were compliant with the relevant guidance on "acceptable" risks provided in national guidance documents. However, with respect to Scenario 2 (POEO Limit), grid maximum ground level concentrations would only need to vary two-fold before they would be non-compliant. EnRisks considered a two-fold margin of safety in the risk estimate result was too small given the uncertainties in the Applicant's assessment with respect to air dispersion modelling and exposure assumptions.

For Scenario 4 (IED Limit), grid maximum ground level concentrations could vary four to five-fold before they would be non-compliant. EnRisks advised this may be considered an acceptable margin of safety, however, consideration would need to be given to the location of the facility, other sources of air pollution and confidence in procedures for managing the quality of the waste and how it is mixed for use.

With respect to Scenario 1 (Expected), grid maximum ground level concentrations could vary 10-fold before they would be non-compliant. EnRisks advised the HHRA used data from other energy from waste facilities in Europe (including Ferrybridge in the UK). As the EPA and ARUP advised the nominated reference facility, Ferrybridge, is not thermally treating like waste streams (as discussed in **Section 6.1**), EnRisks raised concern the results for Scenario 1 do not provide sufficient evidence the HHRA adequately covers the mix of pollutants and the concentrations of pollutants that might be present in the stack emissions. Therefore, the 10-fold margin of safety is not considered sufficient to account for this uncertainty and potential significant variability in the fuel composition.

EnRisks considers there is also insufficient evidence the proposed design fuel mix will result in emissions that comply with the IED limits, which is the Applicant's preferred regulatory limits. EnRisks is also concerned that while the HHRA indicates risks should be acceptable, that is only the case if the emissions comply with the values used in the calculations and the waste feedstock to be thermally treated is the same as the nominated reference facilities, which it is not.

EnRisks review of the HHRA concluded the combustion of the range of waste types proposed at the Eastern Creek facility means there is potential to contribute higher levels of critical pollutants already present in the emissions, new pollutants not already covered in the HHRA or the emissions could still be within the range predicted. EnRisks advised it is therefore not possible to be confident the risk assessment is appropriate and sufficiently conservative and to know whether the proposed IED emission limits can be met.

A copy of EnRisks' detailed review can be found in **Appendix I** of this report.

6.2.4 Evaluation and Conclusion

The Department acknowledges the efforts of the Applicant and its HHRA consultant to address the concerns raised by government authorities, the independent expert and the public throughout the assessment of the application. The Department considers the Applicant's AQIA and HHRA have assessed a range of appropriate operating scenarios to predict the likely impacts to air quality around the facility and the potential for an increase in the risk to human health for those people living and working in the vicinity of the proposed development. The Applicant's assessment of these potential impacts was undertaken using appropriate and accepted methodologies in accordance with the relevant EPA and NSW Health recommended guidelines. The assessments are conservative in nature and have considered a worst-case scenario based on the POEO (Clean Air) Regulation limits.

However, as there is no comparable reference facility, and considering the advice from EnRisks and NSW Health, the Department is not confident the risk estimates presented in the Applicant's HHRA for Scenario 1 (Expected) provide a reliable representation of the potential risks to human health if the facility is permitted to thermally treat the mix of residual waste fuels proposed in the design fuel. The Department therefore concurs with the EPA that the Applicant's ability to achieve the IED limits (Scenario 4) remains uncertain.

The Department notes EnRisks' review states the ground level concentrations in Scenario 1 could vary 10-fold before they would be non-compliant. Given the difference in the proposed fuel mix compared to the reference facilities used to inform the in-stack concentrations for Scenario 1, this scenario cannot be considered representative of the predicted impact of the proposed design fuel mix. Therefore, the Department considers a 10-fold margin of safety is not considered sufficient to account for this uncertainty and potential significant variability in the feedstock composition.

The Department acknowledges there is significant community concern regarding the proposal, particularly regarding the potential for unacceptable long-term risks to the health of the local community. Given the number of sensitive receivers in proximity to the proposed development, including densely populated residential areas, schools and childcare centres, it is critical to have confidence in the risk estimates presented in the HHRA. The Applicant's assessment has not given the Department sufficient confidence in the risk estimates presented.

EnRisks, EPA and NSW Health have also indicated they do not have a sufficient level of confidence in the Applicant's assessment of air quality impacts or the risk to human health. In this case, a precautionary approach is recommended due to the lack of scientific certainty regarding the composition and concentration of chemicals in the stack emissions and the concentrations at which these pollutants would be present at ground level.

Having regard to the expert advice from EnRisks and the views of the EPA and NSW Health, the Department's assessment concludes if the Applicant is permitted to thermally treat the proposed design fuel mix at the facility, there is an unknown and potentially unacceptable risk to human health for the local community, now and into the future. As such, having regard to the principles of ecologically sustainable development, namely the precautionary principle and consideration of inter-generational equity, the proposal cannot be supported in its current form.

6.3. Issues Raised in Submissions

6.3.1 Number and location of submissions

The consideration of any submissions is a mandatory consideration under Section 4.15 of the EP&A Act.

The proposed development has generated significant opposition and concern within the community, particularly from residents in Western Sydney in the Blacktown and Penrith local government areas. Approximately 98% (949) of the 965 public submissions received objected to the development, with 464 (49%) of objectors located within these local government areas and within a five km radius of the proposed development site (see **Figure 13**).

There were only two submissions in support of the development, comprising less than 1% of submissions overall. Only one of these was from a member of the local community.

Both Council and Penrith City Council have objected to the development throughout the assessment process and both councils maintained their objection following their review of the RTS. The councils arranged joint community information sessions during the public exhibition period of the Amended EIS. Following the Applicant's RTS being made publicly available on the Department's website, Council arranged a further community meeting in February 2018. It is understood approximately 450 people attended this meeting. The submission received from Council on the RTS noted 'significant and valid community concern' as a reason for recommending refusal of the proposal.

Two local resident action groups were formed specifically to oppose the development, 'No Incinerator for Western Sydney' and 'Concerned Residents of Western Sydney'. The Facebook community pages for these groups reporting they have 1,745 and 744 people, respectively, following these pages. The 'No Incinerator for Western Sydney' group has organised numerous rallies and protests against the proposed development at various locations over the last 18 months, including at the proposed development site.

On 6 February 2018, a petition was tabled to State Parliament with around 12,000 signatures. The petition triggered a debate in NSW Parliament on 15 February 2018. The key concerns raised in the petition related to the potential impacts on air quality, human health and the suitability of the site given its proximity to densely populated residential areas. A second petition raising the same concerns was tabled on 13 February 2018 with 10,668 signatures.

In July 2017, the Member for Mulgoa, Ms Tanya Davies MP, also started a petition against the facility. This petition calls on the Commission to reject the application unless the Applicant can categorically demonstrate there are no residual risks to human health.

The Department acknowledges that while there are a few members of the community which support the proposal, the consultation and engagement undertaken by the Department and the local councils indicate a local community largely united in its opposition to the proposed development (see **Figure 13**).

The local members for Mt Druitt, Blacktown, Prospect and Londonderry have all voiced their opposition to the proposed facility in NSW Parliament on behalf of their local communities, raising concerns about the potential air quality and human health impacts, the scale of the facility and the suitability of the site having regard to its proximity to residents, schools, childcare centres and retirement villages.

Importantly, since the further amended application and RTS were made publicly available in December 2017, correspondence from the community has continued and the local resident action groups remain opposed to the development.

6.3.2 Key Issues Raised in Submissions

A significant proportion of the public submissions raised three key issues, namely, human health risk (50%), suitability of the site (45%) and air quality (28%) (see **Figure 11**). In particular, this included concerns regarding the predicted unacceptable risk to breastfed infants, potential impacts of dioxins in emissions, the delayed onset of health issues and children's health, proximity to residential areas and the Prospect Reservoir and the scale of the facility. Other matters raised included the adequacy and feasibility of mitigation measures, uncertainty of the emissions profile, cumulative impacts, management of nano-particles (particulates smaller than $PM_{2.5}$), increase in emissions during a shut-down event, impacts on ground level ozone, emissions produced by additional vehicles and smoke and smog.

A further submission objecting to the amended application as described in the RTS was also received from Allens, on behalf of Jacfin, an adjoining landowner of a large parcel of industrial zoned land. Jacfin objected to the development as it considers it is prohibited in the IN1 General Industrial Zone, it is inconsistent with existing employment and residential land uses and the desired future character of the area and there is likely to be impacts of odour and hazardous dioxins. Jacfin also considered there were a number of erroneous assumptions, deficiencies and inconsistencies in all past and new assessments and the majority of the concerns previously raised by Jacfin have not been resolved in the RTS.

Penrith City Council's submission on the RTS was derived from Council's internal review of the RTS as well as feedback from the local community at a public meeting. Key issues raised included human health and the environment, air quality, odour, aviation impacts, site suitability, notification and advertising. Council recommended all specialist technical reports be subject to an independent review.

Following its review of the RTS, Council resolved to request the Commission refuse the application on the basis it does not meet the DGRs, the findings of the Parliamentary Inquiry have not been released, the Applicant has not obtained community acceptance of the proposal, there is significant and valid public concern, concerns about the projected emissions, information gaps in the RTS, outstanding environmental issues and permissibility.

6.3.3 Issues with the Community Consultation

A number of community submissions raised concerns regarding the adequacy of community notification and consultation by the Applicant regarding the proposed development. This issue was also noted and raised by Council in its submission on the RTS, in which it stated the Applicant did not address community liaison initiatives recommended by Council. Council raised concern that despite assurances from the Applicant there had been adequate community consultation, the opposition and pressure from the community continues to mount.

The Applicant presented a summary of the community consultation it has undertaken as part of the RTS. This included a project website, a 1800 community line and project email, key stakeholder correspondence,

mailbox drops, a community information session, a site tour and attendance at the Penrith and Blacktown community consultation meetings during the exhibition of the Amended EIS. The Applicant considers the community notification of the proposed development was extensive and adequate for a proposal of this nature and scale.

While the Applicant has informed the community and shared information about the proposal and given them opportunities to ask questions, the Department considers this consultation has not been effective in engaging with the community to understand the social impacts, their views and concerns. The Applicant has not established a community liaison or advisory group which the Department agrees with Council would be appropriate for a proposal of this scale and nature, particularly having regard to the level of angst in the community about the development. Given energy from waste is new to NSW, and this is the first proposal of its kind in Sydney, the Department considers the Applicant has not effectively engaged or collaborated with the community in its decision-making about the proposal and as such has been unable to gain their confidence or support.

6.3.4 Evaluation and Conclusion

The Department has carefully considered the issues raised in submissions from the public, special interest groups and the government authorities as required by the EP&A Act. There is clear and overwhelming opposition to the proposed development in both the local community and the key State and local government authorities, with the key issues of concern relating to the risk to human health, air quality impacts and the suitability of the site.

The Department notes the EfW Policy requires genuine dialogue with the community and states energy from waste is a valid pathway when community acceptance to operate such a process has been obtained. Based on the consideration of the nature and extent of submissions, the key issues raised and the concerns raised about the Applicant's consultation with the community, the Department does not consider the Applicant has entered into a genuine dialogue with the community nor has it gained their acceptance or support.

6.4. Public interest

The Department has considered the issue of the public interest in relation to the proposal. In doing so, the Department has considered the issues raised by the community (as discussed in **Section 6.3** of this report). Departmental officers have also inspected the site and the surrounding areas, including various vantage points within a two-kilometre radius of the facility. Officers have also spoken with members of the local community and representatives of a local school in an effort to understand the issues raised by the community.

The EPA's EfW Policy provides technical criteria the Applicant must meet to ensure the potential social and environmental impacts of the proposal are considered and to determine if the proposal is in the public interest. The importance of delivering a community benefit and having community acceptance of an energy from waste proposal is reflected in the EfW Policy, which states:

> *'the recovery of energy and resources from the thermal processing of waste has the potential, as part of an integrated waste management strategy, to deliver positive outcomes for the community and the environment. Energy from waste can be a valid pathway for residual waste where:*
> - *Further material recovery through reuse, reprocessing or recycling is not financially sustainable or technically achievable*
> - *Community acceptance to operate such a process has been obtained.'*

6.4.1 Applicant's Assessment of Community Benefit and Acceptance

The Applicant considers the proposal represents a positive development outcome for the site and surrounding area and is an appropriate and suitable land use for the following reasons:

- the use of proven best practice technology to control emissions and create green energy from 552,500 tonnes of genuine residual waste fuel that would otherwise go to landfill
- a net positive greenhouse gas effect by eliminating approximately 544,000 tpa of carbon dioxide
- a waste disposal activity that complements the existing waste disposal and recycling activities at the adjacent Genesis MPC
- provides for the generation and export of 68.7 MW of electricity to the National Electricity Grid, enough power for 100,000 homes
- the generation of 500 construction jobs, 55 jobs during operation and several hundred indirect jobs which will be of local and State economic benefit
- the assessment has demonstrated there will be no adverse air quality or human health impacts.

The Applicant also argues there is a large infrastructure gap in resource recovery infrastructure and waste generation rates for both material recovery and energy from waste facilities. The Applicant's assessment discusses three recent studies that examine Class 2 General Solid Waste landfill capacity in Sydney, which estimate Sydney's contingency landfill space would suffice for somewhere between 5.5 years to 18.5 years. Given the depletion of landfill capacity, the Applicant concludes the proposed facility is well placed to help take the strain off Sydney's Class 2 landfills.

The Applicant advised it considered a range of alternative ways in which the proposal could deliver a community benefit. This included providing low cost electricity directly to local households via the National Electricity Grid, however, this was deemed unfeasible by the Applicant for regulatory reasons. As part of the RTS, and in response to the National Energy Guarantee[10], the Applicant has offered to progressively provide, free of charge, to up to 1,000 homeowners in the immediate area, fully installed roof top solar installations upon the commencement of construction of the facility. In addition, to gain the confidence of the community and deliver full transparency of the waste fuel stream to the regulatory bodies, the Applicant has also committed to fund the cost of employing a full-time on-site EPA inspector to verify the waste fuel stream on a 24-hour basis.

The Applicant's assessment concludes the proposed development is in the public interest as the proposal has significant importance for the management of waste and clean energy production to the local community and wider Metropolitan Sydney and any environmental impacts will be low and managed within the locality.

6.4.2 Evaluation and Conclusion

The Department acknowledges the proposed development provides a number of public benefits to the broader community as described by the Applicant. The Department agrees it is in the broader public interest to reduce the amount of residual waste going to landfill as Sydney's landfill capacity is limited and alternative means of reducing the amount of waste going to landfill must be considered. The Department also notes the social and economic benefits of the development for the broader community. However, these benefits cannot be realised without potentially unacceptable air quality and human health impacts the local community would have to endure for the life of the development.

While the NSW Government supports the development of the energy from waste industry in NSW and has provided a framework for the development of this industry through the EfW Policy, the EP&A Act provides a merit-based approach to consider the impacts of developments against applicable statutory and policy requirements. As discussed in **Section 6.1**, the Department, EPA and the independent experts are not satisfied the requirements of the EfW Policy have been met for this proposal.

The public submissions demonstrate the community of Western Sydney surrounding the site consider there is insufficient justification for an energy from waste facility of this scale in this location, and the proposal is not in their interest. Furthermore, the proposal has been opposed by the community's own Council, the local Members of Parliament representing the Federal electorates of Western Sydney, the local Members for the State electorates of Blacktown and Mt Druitt, the local primary school and other local special interest groups and businesses. The submissions, petitions and representations from local members of NSW Parliament, indicate to the Department the Applicant has not gained the acceptance of the community.

The Applicant predicts the facility would comply with all environmental amenity criteria, including air quality, human health risk, odour, noise and hazard and risk. However, the Department, EPA, NSW Health and the independent experts consider the risk of impacts to air quality and human health is unknown and has the potential to be high and unacceptable.

The Department acknowledges the contribution the proposed development would make to achieving State targets for the diversion of waste from landfill and the reduction in greenhouse gas emissions. However, there are numerous other means of reducing the volume of waste going to landfill through re-use, recovery and recycling waste, which are higher order waste management strategies identified in the waste hierarchy and supported by the NSW Government through the WARR Act, WARR Strategy 2014-21 and the NSW EPA's Waste Less Recycle More initiative. Additionally, the NSW Waste Levy provides a strong economic signal by making waste avoidance, reduction and recycling more financially attractive than disposal to

[10] The National Energy Guarantee aims to support the provision of reliable, secure and affordable electricity with a focus on ensuring: the reliability of the system is maintained, electricity sector emissions reductions needed to meet Australia's international commitments are achieved and these objectives are met at the lowest overall costs.

landfill. It is a key policy tool for driving waste diversion from landfill in NSW and achieving the targets in the WARR Strategy.

The Department has considered the issue of the public interest very closely. On balance, the Department does not consider the public benefit of an energy from waste facility of this scale in close proximity to residential areas in Western Sydney outweighs the potentially unacceptable impacts the proposed development would have on the surrounding local community in the short, medium and long-term. As a consequence, the Department does not consider the proposed development is in the public interest.

7. CONCLUSION

The Department has assessed the application against the matters listed in Section 4.15 of the EP&A Act and the objects listed in Section 1.3 of the EP&A Act, including the principles of ESD. The Department has considered the application on its merits, taking into consideration the strategic plans that guide industrial development in Western Sydney, the SEPPs that apply specifically to the concept proposal and State policies and strategies relevant to waste management in NSW.

The assessment has involved considerable consultation with the Applicant, the government authorities that raised significant concerns about the proposal and the Department's appointed independent experts. The Department has reviewed and evaluated two amendments to the application and multiple revisions of the supporting technical reports and spent three years working with the Applicant, the EPA and the independent experts in an attempt to address the concerns about the proposal's environmental impacts and its inconsistencies with the EfW Policy.

The proposal is located in an area surrounded by densely populated residential areas and a large number of sensitive receivers, including schools and childcare facilities. Development adjacent to these land uses must achieve a high level of environmental protection. The Department has engaged extensively with the Applicant and its consultants, to resolve outstanding issues regarding the proposal's inconsistency with the EfW Policy, potential air quality impacts and risk to human health. Despite the significant work undertaken, the Department concludes the Applicant has been unable to adequately resolve the outstanding issues and provide the Department with confidence the proposal is consistent with the requirements of the EfW Policy, the potential impacts would be acceptable and that air quality and health of the local community would be protected.

The Department's assessment concludes:

- the proposal is inconsistent with the EfW Policy which presents uncertainty around the performance of the facility and the long-term risks to the environment and the health of the local community
- the Applicant has not identified a suitable reference facility and therefore the expected air emissions from the proposed design fuel are unknown
- given the uncertainties described above, the location of the proposal in close proximity to densely populated residential areas, schools, childcare centres and employment areas in Western Sydney, is not suitable
- the proposed design fuel contains a significant portion of potentially hazardous waste streams which may result in harmful compounds, such as dioxins and furans, in the emissions
- the development is likely to use material for energy recovery instead of utilising this material to achieve higher order resource recovery outcomes, which is inconsistent with the principles of the WARR Act and the NSW EfW Policy
- the Applicant's assessment is likely to have overestimated the volume of residual waste available for energy recovery in the MLA and has therefore not adequately justified the scale of the proposed facility
- submissions on the development demonstrate there is significant opposition to the proposal
- the Applicant has been unable to gain the community's acceptance of the proposed development
- the proposal is inconsistent with a number of the relevant waste and resource recovery strategies with respect to its scale and proposed waste feedstock
- the development is not in the public interest as the public benefit of the proposed development does not outweigh the potential unacceptable impacts the proposed development may have on the surrounding local community now and into the future.

It is considered these concerns and impacts cannot be appropriately dealt with by conditions of consent. The Department does not consider in this instance the wider benefits of the proposal in terms of reducing

the amount of waste going to landfill and the creation of electricity outweigh short, medium and long-term impacts and risks associated with the proposal.

On balance, the Department concludes the application is not consistent with the objects of the EP&A Act, is not in the public interest and should be refused.

Following on from its assessment of the application, the Department considers that the development application may not be approvable. This assessment report is hereby presented to the Independent Planning Commission for determination.

Prepared by: Sally Munk
Industry Assessments

Endorsed by:

C. Ritchie 4/4/18.

Chris Ritchie
Director
Industry Assessments

Endorsed by:

Sargeant 11/4/18

Anthea Sargeant
Executive Director
Key Sites & Industry Assessments