Decision Report

Application for Works Approval

Division 3, Part V *Environmental Protection Act 1986*

Works Approval Number	W6196/2018/1
Applicant	East Rockingham RRF Project Co Pty Ltd
ACN	139 310 053
File Number	DER2018/001625
Premises	East Rockingham Waste to Energy Facility 26 Office Road, EAST ROCKINGHAM Legal description - Lot 1 on Diagram 62220 Certificate of Title Volume 1608 Folio 741
Date of Report	23 July 2019
Status of Report	Final

Table of Contents

1. Definitions of terms and acronyms

In this Decision Report, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
ACCS	Automated Combustion Control System
ACN	Australian Company Number
ANZECC	Australian and New Zealand Environment and Conservation Council
APC	Air Pollution Control
Applicant	New Energy Corporation
Application	The applicant's works approval application
Category/ Categories/ Cat.	Categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
C&I	Commercial and Industrial
C&D	Construction and Demolition
CEMS	Continuous Emissions Monitoring System
Commissioning phase	means the period where the works have been practically completed and are tested to ensure everything works as it was designed
Decision Report	refers to this document.
Delegated Officer	an officer under section 20 of the EP Act.
DWER	Department of Water and Environmental Regulation
EPA	Environmental Protection Authority
EP Act	*Environmental Protection Act 1986* (WA)
EPP	Environmental Protection Policy
EP Regulations	*Environmental Protection Regulations 1987* (WA)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
HZI	Hitachi Zosen Inova
IED	European Union Industrial Emissions Directive 2010/75/EU
I-TEQ	International Toxic Equivalency
KIA	Kwinana Industrial Area
MS	Ministerial Statement
MSW	Municipal Solid Waste
Noise Regulations	*Environmental Protection (Noise) Regulations 1997* (WA)
Operational phase	means the period from completion of commissioning until a licence has been issued for the premises
PM	Particulate Matter
PM_{10}	used to describe particulate matter that is smaller than 10 microns (µm) in diameter
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report
Risk Event	As described in *Guidance Statement: Risk Assessment*
RIZ	Rockingham Industrial Zone
SNCR	Selective Non Catalytic Reduction
SWIS	South West Interconnected System
TPA	Tonnes Per Annum
$\mu g/m^3$	micrograms per cubic metre
WtE	Waste to Energy

2. Purpose and scope of assessment

New Energy Corporation Pty Ltd (NEC) lodged a works approval application on 22 November 2018 for the construction, commissioning and operation of a waste to energy (WtE) facility at Lot 1 (No. 26) Office Road East Rockingham (the Application). The WtE facility has a maximum design capacity to incinerate 330,000 tonnes per annum (tpa) of waste.

The WtE facility has been assessed under Part IV and has a Ministerial Approval. The emissions of the WtE facility have been designed to meet the European Union's Industrial Emissions Directive 2010/75/EU (the IED).

This Decision Report documents the Delegated Officer's assessment and determination of the application consistent with DWER's Regulatory Framework. The Application is consistent with and not materially different to the Proposal assessed under the provisions of Part IV of the EP Act.

2.1 Application details

The documents that form the Application and Departmental Guidance that has informed the assessment of the Application are set out in Attachment 1.

3. Background

The Applicant proposes to construct and operate a WtE facility at Lot 1 Office Road East Rockingham WA. The location is within the Rockingham Industrial Zone (RIZ) of the City of Rockingham, which is part of the larger Kwinana Industrial Area (KIA). The design life of the WtE facility is a minimum of 30 years. The Applicant plans to accept waste, incinerate it and produce electricity from the heat generated during the incineration process. These activities make the premises prescribed and as such require a works approval and a subsequent licence for the operation stage of the project.

Table 2 lists the prescribed premises applicable to the Application.

Table 2: Prescribed Premises Categories

Classification of Premises	**Description**	***Approved Premises production or design capacity or throughput***
Category 52	Electric power generation: premises (other than premises within Category 53 or an emergency or standby power generating plant) on which electrical power is generated using a fuel- 10 MW or more in aggregate (using a fuel other than natural gas)	101.8 Megawatt thermal (31.4 MW of electricity)
Category 60	Incineration: premises (other than premises within category 59) in which waste, excluding clean paper and cardboard is incinerated	330,000 tonnes per annum

4. Overview of Premises

4.1 Operational aspects

The WtE facility has been designed to incinerate municipal solid waste (MSW), sewage sludge and residual waste from commercial and industrial (C&I) and construction and demolition (C&D) recycling activities. Heat is to be recovered from the incineration process to produce steam for the generation of electricity. The WtE facility plans to receive waste from third parties on a contractual basis and is not open to the general public. The WtE facility has been designed on the Hitachi Zosen Inova (HZI) grate combustion technology to incinerate 330,000 tpa of waste.

The WtE facility uses the following five main process stages which are shown in Figure 3 in Attachment 3 and further discussed below:

1. waste receival and handling (Waste Delivery and Storage)
2. waste incineration (Combustion and Boiler)
3. electricity production (Energy Recovery)
4. waste gas treatment (Flue Gas Treatment); and
5. residue handling (Residue Handling and Treatment).

4.1.1 Waste receival and handling

Waste is to be transported to the facility in fully enclosed trucks to reduce odour. Waste will be weighed upon entry to the receival hall and unloaded into inspection bays. The receival hall has been designed to operate under negative pressure (for odour control) and is to be fitted with automatic rapid opening/closing doors. The receival hall has been designed with the capacity to store inwards wastes for four days.

During unloading of trucks staff are to visually inspect waste and reject non-conforming waste. Non-conforming waste will be removed from the premises and transferred elsewhere for treatment or disposal.

The waste receival hall is to be maintained under negative pressure to reduce odours. The design of the WtE facility provides for inlet air to the incineration process to be drawn from the receival hall creating a vacuum and incinerating odorous air.

When the incineration process is not operating, an auxiliary fan will draw air from the receival hall and emit it via a 48m high shutdown stack. Its location is shown in Figure 4 of Attachment 3.

4.1.2 Waste incineration

Waste will pass down a feed chute onto a moving block HZI combustion grate which has four zones that facilitate the four phases of the combustion process: drying; ignition; gasification; and combustion of volatiles and char burn out. A ram feeder ensures a steady feed of waste into the incinerator and even distribution over the grate. The inclination of the grate in combination with its moving block mixes waste and assists the incineration process. The temperature in the furnace and secondary combustion chamber are controlled to at least 850°C. Gas fired burners assist to ensure the minimum temperatures are achieved and they also allow for start-up and shut-down of the incineration process. The design allows for waste gases to be retained for at least two seconds in the furnace and secondary combustion chamber.

4.1.3 Electricity production

Waste heat from the incineration process is to be recovered in a five-pass water tube boiler system with a thermal capacity of 101.8 MW coupled to a turbo generator producing up to 31.4 MWe. About 90% of this is likely to be exported to the South West Interconnected System (SWIS) while the remainder is to be used on site.

4.1.4 Waste gas treatment

Waste gases from the combustion process are emitted to air through a 60m stack and controlled via an air pollution control (APC) system. The location of the main stack is shown in Figure 3 of Attachment 1.

Waste gases are first treated in the secondary combustion chamber through a HZI selective non catalytic reduction (SNCR) system that uses the injection of a reactant (e.g. aqueous ammonia) to convert NOx to nitrogen and water. The reaction takes place within a temperature range of 850°C to 900°C.

Downstream of the boiler a HZI dry waste gas treatment system is installed. Hydrated lime is injected into the flue gas where it reacts with acid gases (e.g. hydrogen chloride, hydrogen fluoride and sulfur dioxide). Heat exchangers and a bypass system in the last pass of the boiler control the temperature of the boiler and the inlet flue gas treatment.

Some of the lime is recycled to optimise consumption of the reactants. At the same injection point, activated carbon is added to the flue gas to remove hazardous compounds. Afterwards waste gases pass through a reverse pulse baghouse to remove particulate matter prior to emission to air.

The APC is designed to ensure that emissions from the WtE facility comply with IED limits.

4.1.5 Bottom ash management

Bottom ash is extracted on a continuous basis from the combustion chamber through a water seal and conveyed to a storage area (5 days capacity). Its ferrous metals are removed and recycled.

Non-ferrous bottom ash is transferred to a maturation area where it is stored for a period of two to three months prior to it being transferred elsewhere for recycling or re-use.

4.2 Applicant controls for air quality emissions

4.2.1 Normal operations

The Applicant has proposed the following controls to ensure emissions to air are at all times compliant with the IED:

1. Acceptance of MSW and selected C&I and C&D wastes to avoid combustion of hazardous wastes (control of waste acceptance).
2. Management and packaging of feed stocks to provide a feed that is relatively uniform in calorific value, density, moisture content and chemical composition. This will assist with maintaining stable conditions during combustion.
3. Use of technology designed to meet the IED in terms of design temperatures and residence times and destruction efficiencies for organics.

4. Each component of the facility has been selected for high efficiency and reliability and represents best available technology. All fans and pumps are provided with redundant backups that can be bought online immediately in the event of a failure.
5. The APC system has been designed with 25% excess capacity so routine maintenance can be performed without a loss in efficiency or the need to shut down the combustion system.
6. A continuous emissions monitoring system (CEMS) will be operational to provide information and support control of the incineration process. There will also be a further hot standby CEMS which will ensure that there is continuous monitoring data available even if there is a problem with the duty CEMS. The CEMS will monitor, log and report on particulates, carbon monoxide, sulfur dioxide, hydrogen chloride, oxygen, nitrogen oxides, ammonia and volatile organic compounds.
7. An Environmental Management System (EMS) will be developed and implemented that will incorporate plans and procedures for the following:
    - waste acceptance criteria and procedures;
    - start- up and shutdown of the facility;
    - operation of the facility in emergency conditions;
    - all aspects of monitoring; and
    - procedures for assessing and handling solid residues.

4.2.2 Emergency shutdowns

The Applicant has proposed the following controls for emergency shutdowns:

1. The APC system incorporates backups for key systems to ensure there is no interruption to reagent feeds (ammonia, lime and activated carbon). The baghouse is designed with spare capacity such that if an increased level of particulates is detected by the CEMS due to a bag failure, the bag can be isolated while maintaining performance with the bag being replaced while the baghouse continues to operate.
2. In the event of a disturbance to conditions in the grate combustor (e.g. gas bottle explosion) the system incorporates air control flaps that allow airflow to be restricted, instantaneously shutting down combustion. In such circumstances the burners are shut off and the induced draught fan either shut down or turned down to low flow. This means that the bed is damped down and produces minimal emissions which continue to be treated in the APC system
3. In the event of a total power failure the back-up power system comes online and allows a controlled shut down which involves the following:
    a. waste feed ceases;
    b. burners are shutdown;
    c. air flaps close restricting air flow through the combustor to reduce gas volumes and emissions; and
    d. the main induced draught fan is shut down and the standby system powers an auxiliary fan that directs minor volumes of exhaust gases through the APC system which can also be powered by the standby power system.
4. The CEMS which monitors emissions is certified and incorporates a hot back-up which ensures 100% availability of the emissions monitoring system.

4.3 Infrastructure

The WtE facility infrastructure, as it relates to Categories 52, 60 and 62, is detailed in Table 3.

Table 3: East Rockingham Waste to Energy Facility infrastructure

Infrastructure/Equipment	Specifications (design and construction)
Waste Acceptance area: Weighbridge	- Weighbridge capable of measuring the weight of all incoming trucks to determine the amount of waste being processed by the plant; - Radiation detection equipment to determine the presence of radioactive material
Waste receiving area: Tipping hall	- Rapid opening and closing roller doors and louvres; - Negative air pressure that prevents the exit of air from the Tipping Hall whenever doors are open; - Concrete flooring within the Tipping Hall to ensure that no waste or wastewater will be discharged to the environment from these areas; and - CCTV and large object detection system, designed to identify and facilitate removal of large objects which are unsuitable for incineration
Waste Receiving Area: Waste Bunker	- The waste bunker to be equipped with automatic doors, designed to ensure the bunker remains sealed while no waste is being deposited; - Mixing cranes to mix the waste to ensure a suitably homogenous feedstock for incineration to meet all emission limits; - An air extraction system from the primary air fan for the incinerator, located above the waste bunker to ensure negative pressure within the waste bunke; - A ventilation stack with a discharge point a minimum 48m above ground level for air extracted from the waste receiving area when the incinerator is not operating; and - Concrete flooring within the Waste Bunker to ensure that no waste or wastewater will be discharged to the environment from these areas
Waste incineration	- One combustion line, containing a furnace using HZI grate technology; - Start-up burners, capable of firing as auxiliary burners to maintain incineration temperature in the incineration chamber such that minimum burning temperatures (850°C) and residence times (2 seconds) are maintained at all times during operation; - Temperature sensors to be installed which are capable of the representative measurement across the entire incineration chamber and waste gases produced therein; - Oxygen sensors to be installed which facilitate the measurement of combustion efficiency; - Ammonia solution injection system capable of minimizing NOx emissions to below 400 mg/m^3; and - Incineration gas recirculation fan, capable of recirculating flue gases from down stream of the fabric filter to the overfire nozzles for the purpose of minimisation of NOx emissions
Automated Combustion Control System (ACCS)	- Automated monitoring and control system capable of collecting CEMS (Continuous Emission Monitoring System) output data and using this data to control the grate boiler combustion and APCS parameters
Boiler Economiser	- Boiler Economiser capable of reducing flue gas temperature to below 150°C

Infrastructure/Equipment	Specifications (design and construction)
Air Pollution Control System (APCS)	- Hydrated Lime Injection System capable of injecting dry hydrated lime or sodium bicarbonate into the flue gas stream and reducing: • SO_2 emissions to below 200 mg/m^3 • HF emissions to below 4 mg/m^3; and • HCl emisions to below 60 mg/m^3. - Activated Carbon Injection System capable of injecting activated carbon into the flue gas and reducing: • VOC emissions to below 20 mg/m^3 • Dioxin and furan emissions to below 0.1 ng/m^3 as I-TEQ • Mercury emissions to below 0.05 mg/m^3. - Bag filter capable of: - Minimising particulate matter emissions to below 30 mg/m^3 - Capturing activated carbon, sodium bicarbonate and/or lime for the purposes of treating flue gas emissions; and - Quick detection and isolation of broken bags, without requiring a baghouse bypass situation to exchange or replace the broken bag
CEMS	- CEMS capable of accurately measuring the following pollutants from the waste gas emissions: • Particulate matter • NOx • SO_2 • HCl • NH_3 • CO; and • VOCs
Stack and associated ducting	- Multi Flue stack of minimum 60m above ground level; and - Sampling ports for emissions monitoring that are compliant with AS4323.1
Bottom Ash Treatment, Storage and Maturation Area	- Concrete flooring with the Bottom Ash Bunker to ensure that no waste or wastewater will be discharged to the environment; - Concrete flooring within the Bottom Ash Treatment, Storage and Maturation Area to ensure that no waste or wastewater will be discharged to the environment; and - Covered conveyors to transport bottom ash, fly ash, and APC residues

5. Location and siting

5.1 Siting context

The WtE facility is proposed to be constructed at Lot 1 Office Road East Rockingham, which is a 10ha of undeveloped block of land within the Rockingham Industrial Zone (RIZ). The facility location is shown in Figure 1. The WtE facility is near major haulage routes and existing power transmission infrastructure and is zoned for Industry.

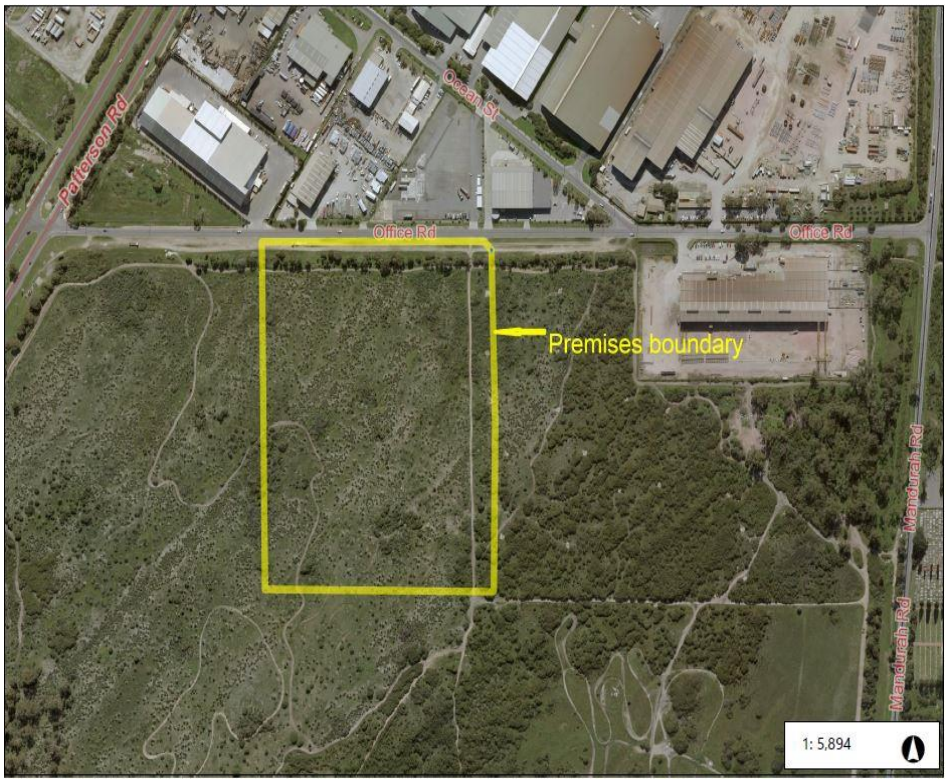


Figure 1: Location of the Premises

5.2 Residential and sensitive Premises

The distances to residential and sensitive receptors are detailed in Table 4.

Table 4: Receptors and distance from Premises boundary

Sensitive Land Uses	Distance from Premises Boundary
Residential premises	There is a single dwelling 1km east of the facility. The nearest residential areas include Medina and Leda (approximately 2.5km east of the facility), East Rockingham (2.5km south west) and Hillman (2.7km south).
Light industrial premises	~ 50m to the north of the premises is the Kwinana Beach light industrial area ~ 2.4 km south is the Rockingham light industrial area

The WtE facility adjoins an area that has been assessed by the EPA as being environmentally acceptable for heavy industry through a Strategic Environmental Assessment (SEA) in 2011 (Assessment number 1390). The WtE facility itself was not included in the SEA as it was considered that the environmental values of the land did not present a significant risk associated with the development of the industrial area.

5.3 Environmental Protection Policy Area

The WtE facility will be located within Area B of the *Environmental Protection (Kwinana) Atmospheric Wastes Policy 1999*.

The SO_2 emission from the WtE facility may need an allocation under the Kwinana EPP. If an allocation is needed then it must be obtained prior to commissioning of the WtE plant under the provisions of Works Approval W6196.

5.4 Specified ecosystems

Cockburn Sound is approximately 1.7km to the west from the Applicant's facility and the nearest Bush Forever site is more than 1km from the facility.

5.5 Groundwater and water sources

The WtE facility is within the Wellard subarea of the Cockburn Proclaimed Groundwater Area as gazetted under the *Rights in Water Irrigation Act 1914*. There are no natural surface water features at or within 1km of the WtE facility. The nearest surface water features are man-made sumps and basins associated with industrial sites approximately 500m to the north. Groundwater comprises an unconfined superficial aquifer, the Rockingham Sand aquifer (present in places), the Leederville aquifer (semi confined) and the Yarragadee aquifer (confined). Groundwater beneath the site flow from east to west and discharges into Cockburn Sound, which is 1.7km to the west.

The distance to groundwater is shown in Table 5.

Table 5: Groundwater and water sources

Groundwater and water sources	Distance from Premises	Environmental value
Groundwater	Groundwater encountered at approximately 3m below ground level	Groundwater salinity 1500-3000 mg/L

5.6 Soil type

The site is located on the coastal fringe of the Swan Coastal Plain and is associated with the Quindalup dune system which comprises relic fore dunes of calcareous sands (Holocene origin). It is at the northern end of the Rockingham- Becher plain which consists of a succession of beach ridges formed during deposition of sand parallel to the beach. Several phases of dune formation at the site has resulted in an irregular pattern of beach ridges and poorly defined dunes and swales.

Table 6 details soil types and characteristics relevant to the assessment.

Table 6: Soil and sub-soil characteristics

Soil and Sub soil	Environmental Value
A13 Coastal dune formations backed by the low- lying deposits of inlets and estuaries: chief soils are calcareous sands (Uc1.11) on the dunes. Associated are various (Uc), (Um), (Uf), (Ug) and acid peat (O) soils in the swale behind the coastal dunes, similar to unit Kf10.	These soils are typified by lime-sand with high permeability, low to medium erosion potential, medium slope stability and high ease of excavation.

6. Legislative context

Table 7 summarises approvals relevant to the assessment.

Table 7: Relevant approvals

Legislation	Number	Approval
Part IV of the EP Act (WA)	Statement Number 994	Implementation of the New Energy Corporation Waste to Energy proposal
Part IV of the EP Act (WA)	Statement Number 1090	Implementation of the revised New Energy Corporation Waste to Energy proposal
Planning approvals	DAP/18/01524	Approved by Metro South-West JDAP on 13 March 2019

6.1 Part IV of the EP Act

6.1.1 Background

The Applicant's proposal for a WtE facility was first referred to the EPA in 2011 under Section 38 of the EP Act. EPA Report 1513 published in June 2014 concluded that the proposal may be implemented. Ministerial Statement (MS) 994 issued in January 2015 specified Waste Acceptance criteria (see Table 8). In January 2017 the Applicant submitted a revised proposal following a change in the combustion technology to be used in the facility. It was advertised for public comment on 22 February 2018. Based on the referral document and public submissions, the EPA determined that the level of formal assessment be set as Environmental Review- four week public review. EPA Report 1624 published 17 October 2018 concluded that the proposal may be implemented and the Minister granted MS 1090 in February 2019.

6.2 Other relevant approvals

6.2.1 Planning approvals

The Metro South-West Joint Development Assessment Panel approved the proposal on 13 March 2019.

6.2.2 Department of Jobs Tourism Science and Innovation

The WtE facility is classified as a Major State Development Project and has been allocated to the Department of Jobs Tourism Science and Innovation as the Lead Agency. Major State Development Projects are defined as projects where the proposed investment is significant or of strategic importance to Western Australia.

6.3 Part V of the EP Act

6.3.1 Clearing

The Applicant will need to clear native vegetation to construct the WtE facility. Approval has been granted through the provision of MS 1090 and the EPA Report 1645 and as such, the exemption detailed in Schedule 6: Clause 2 of the *Environmental Protection Act 1986* applies.

7. Consultation

The Application was advertised on 24 December 2018. Comments were received from The City of Kwinana, The City of Rockingham and a resident of the City of Rockingham. The comments and the Department's responses are shown in Attachment 6.

8. Assessment of Application

In assessing the Application the Delegated Officer has considered preceding decisions made on the application or parts of the application under the provisions of the EP Act and subordinate Legislation. The preceding decisions identified are as follows:

- the assessment in 2011 under section 38 of the EP Act (Ministerial Statement 994 and EPA Report 1513);
- the EPA's and Waste Authority's strategic review on Environmental and Health Performance of Waste to Energy Technologies (EPA and Waste Authority 2013);
- EPA Report 1623 of 2018 in response to a request by the Minister for Environment on how the implementation conditions relating to approved WtE plants should change to restrict the waste feedstock to genuinely residual waste in accordance with the waste hierarchy under section 5 of the *Waste Avoidance and Resource Recovery Act 2007*;
- the assessment in 2018 of a revised proposal under section 38 of the EP Act due to a complete change of technology (Ministerial Statement 1090 and EPA report 1624;
- the Minister's appeal determination on an appeal against the report and recommendations of the EPA on the East Rockingham WtE revised proposal (Appeal number 025 of 2018 against EPA Report 1624);
- the EPA's 2013 Report (1468) and recommendations to the Minister for the Environment under Section 16(e) of the EP Act on the *Environmental and health performance of waste to energy technologies*; and
- the assessment of similar WtE plants and regulatory controls added to works approvals and licences.

8.1 Ministerial Statement 1090 and EPA Report 1624

The EPA considered in its assessment of the revised proposal (HZI technology) the following key environmental factors:

- air quality – impacts to air quality from the generation of emissions during operation of the WtE plant; and
- the social surroundings – potential noise and odour impacts from construction and operation activities associated with the proposal.

In concluding its report, the EPA advised that the proposed WtE plant is environmentally acceptable and it therefore recommended that the proposal may be implemented subject to conditions.

In making the above decision, the EPA noted that a works approval and licence will be required for the proposal under Part V of the EP Act, and that any requirement for emissions monitoring is best regulated through those processes. The EPA advised that, "*continuous monitoring should be required for key pollutants, particularly for nitrogen dioxide and particulate matter (PM_{10} and $PM_{2.5}$).* The EPA also recommended that, "*consideration be given to regulating odour through the licensing process, including provision of a Complaints Management System, under Part V of the EP Act.*

8.2 Appeal Number 025 of 2018 on EPA Report 1624

A member of the public raised an appeal on EPA Report 1624 objecting to the EPA's assessment of the WtE plant. The Minister dismissed the appeal as he considered that the EPA's assessment was appropriate and recommendations were justified.

In making the above decision the Minister noted that the EPA advised that, "*the revised proposal is 'prescribed' for the purposes of Part V of the [EP] Act, and as such, the proponent will require a works approval before commencing any works on site, and to hold a licence before any operations begin. The EPA advised requirements relating to emission limits and monitoring can be applied through that process. The EPA also noted that Schedule 1 of the recommended*

environmental conditions includes a requirement that emissions shall not exceed the limits specified in Annex IV of the IED or its updates. Should there be further updates, the EPA advised that the proposal would be required to meet the replacement standards."

8.3 Ministerial Statement 1090

Ministerial Statement (MS) 1090 specified that the Applicant will need to ensure that itcomplies with the waste acceptance criteria as stated in Table 8 below.

Table 8: Waste types permitted and not permitted to be processed

Element	Description
Waste types permitted to be processed	- Bio-sludge/biosolids - Construction and demolition waste - Commercial and industrial waste - Municipal solid waste - Green waste; and - Non- recyclable residues from material recycling facilities, waste transfer stations/depots and biological waste treatment facilities
Waste types not permitted to be processed	- Scheduled wastes as defined by ANZECC for the National Strategy for the Management of Scheduled Waste (1992) - Medical waste - Radioactive waste - Asbestos - Liquid and oily wastes - Contaminated soils - Tyres - Animal carcasses - Hazardous waste with a halogen content greater than 1% - Highly corrosive or toxic liquids or gases such as strong acids or chlorine or fluorine; and - Explosive materials

The Applicant is also required to prepare and submit a Waste Acceptance Monitoring and Management Plan to the requirements of the CEO. The Plan is to include the following:

1) Detailing the monitoring methodology to:

- identify the supplier of each waste load;
- record all waste loads and quantities received on site;
- describe the types of residual waste accepted on the site including the source separation process for those waste types; and
- record waste types disposed offsite; and

2) Detail a procedure to summarise the monitoring outlined in 1).

A summary of the monitoring results is to be provided every six months from the date of commissioning until the CEO has confirmed by notice in writing that monitoring is no longer required. Prior to commissioning and after receipt of notice from the CEO that the Waste Acceptance Monitoring and Management Plan satisfies the above requirements, the Applicant must implement the Approved Waste Acceptance Monitoring and Management Plan and continue to do so until the CEO has confirmed by notice that implementation is no longer required.

8.4 Existing Works Approvals for WtE plants

The Delegated Office has examined the provision of Works Approval W5911/2015/1 and its amendments to ensure consistency with the regulatory approach used for WtE plants. The Delegated Officer notes that W5911/2015/1 allows for the construction, commissioning and operation of the WtE plant to be built a Leath Road, Kwinana Beach.

Works Approval W5911/2015/1 also provides for:

- emissions monitoring;
- emission limits;
- reporting to the CEO; and
- the Works Approval Holder to obtain an allocation for sulfur dioxide emissions in accordance with the provisions of the Kwinana EPP, after the works approval was granted but prior to its commissioning.

8.5 Assessment

In relation to assessing the Application the Delegated Officer has not re-assessed the risks to the environment. This is because the Minister, through granting Statement 1090 and making a determination on an appeal, has determined that the EPA's assessment of the revised proposal was appropriate, and its recommendations justified. The Delegated Officer notes the EPA's determination that the proposal (now a works approval application) is environmentally acceptable.

Assessment of the Application therefore has been based upon implementing the directives and guidance provided by the Minister and the EPA and giving attention to administrative functions of the Application and Works Approval W6196/2018/1. In this regards the Delegated Officer considers that Works Approval W6196/2018/1 should:

- allow for the construction of the WtE plant;
- allow for the commissioning of the WtE plant;
- allow for a time limited period of operation of the WtE plant ahead of a licence application;
- control emissions to the environment through limits, consistent with the IED;
- monitor emissions to the environment through continuous emissions monitoring and periodic monitoring;
- allow for the management of complaints about the WtE environmental performance;
- provide for the administration of the works approval;
- provide for reporting to the CEO from time to time;
- allow for or enable the works approval holder to obtain an allocation under the Kwinana EPP for sulfur dioxide emissions;
- not duplicate the requirement of other legislation; and
- not be inconsistent with decisions made under Part IV of the EP Act.

9. Determination of Works Approval conditions

Following on from Section 8, the Delegated Officer considers that the conditions listed below in Table 9 are appropriate.

Table 9: Summary of conditions to be applied

Condition reference	Grounds
Infrastructure and Equipment 1, 2, 3 and 4	The essence of the Works Approval is to allow the works. Infrastructure and Equipment are the works that the Applicant proposes to construct and as such these are prescribed in the conditions of the Works Approval.
Emissions 5, 6, 7 and 8	Emissions to air are conditioned to allow the Applicant to have emissions from the works under the Works Approval. Emission limits are in line with the IED.
Emission monitoring 9, 10, 11 and 12	Emissions are to be monitored to ensure compliance with the emission limits. The monitoring requirements are based upon the Applicant's proposal and the IED.
Record keeping 13, 14 and 15	Record keeping and reporting are part of the conditions to allow DWER to monitor the environmental performance of the premises. A condition regarding complaints handling has been included as part of EPA's recommendation to DWER.
Reporting 16, 17, 18, 19 and 20	Reporting conditions are included to ensure DWER gets the necessary reports of the emission monitoring and to enable a compliance check against the conditions of the Works Approval.
Commissioning and time limited operation 21 and 22	These conditions have been included to explicitly allow and control the time period for pre-commissioning, commissioning and operation upon completion of the works.

DWER notes that it may review the appropriateness and adequacy of controls at any time and that, following a review, DWER may initiate amendments to the Works Approval under the EP Act.

10. Applicant's comments

The Applicant was provided with the draft Works Approval on 14 June 2019. The Applicant provided comments on 25 June 2019 which are summarised, along with DWER's response, in Appendix 2. The Applicant was provided with a 2nd draft of the Works Approval and a draft Decision Report on 8 July 2019 for comments. The Applicant provided some more comments of administrative nature on 19 July 2019, which also have been summarised, along with DWER's responses in Appendix 2.

11. Conclusion

The Delegated Officer after consideration of the Application in context of existing approvals has decided to grant a works approval, subject to conditions. This decision is subsequent to and based upon preceding decision made by the Minister for the Environment under the provisions of Part IV of the Act, which found the application to be environmentally acceptable. As such, the Delegated Officer did not re-assess the acceptability of the Application through a risk assessment.

The conditions specified in the works approval are those that relate to directions and guidance provided by the Minister and those that are necessary for the administrative functions of a works approval.

The Delegated Officer notes that while the conditions of the works approval allow for monitoring and control of emissions of oxides of sulfur to air, these emissions are subject to the provisions of the *Environmental Protection (Kwinana) (Atmospheric Wastes) Policy 1999* (Kwinana EPP). If the site is to become a significant industrial source, then it must receive an allocation in accordance with the provisions of the Kwinana EPP, prior to commissioning the WtE plant.

Paul Byrnes

Delegated Officer
under section 20 of the *Environmental Protection Act 1986*

Attachment 1: Key documents

	Document title	In text ref	Availability
1.	New Energy works Approval Application		DWER Record: A1742899
2.	Additional information- email from Consultant re Request for Further Information		DWER Record: A1755650 DWER Record: A1755972 DWER Record A1757019
3.	Additional Information- email from Consultant re Stack cross sections and positions		DWER Record: A1755653 DWER Record: A1755652 DWER Record: A1755651
4.	Appendix 7- Air Emissions Modelling		DWER Record: A1742905
5.	EPA Report- East Rockingham Waste to Energy Revised Proposal		DWER Record: A1742909
6.	East Rockingham ERD Final Low Res		DWER Record: A1742908
7.	Appendix 20- Final Noise Report		DWER Record: A1742911
8.	Appendix 4- UK Standard IBA		DWER Record: A1742912
9.	Additional Information- Works Approval for New Energy Waste to Energy Facility 26 Office Road East Rockingham		DWER Record: A1755650
10.	Resident response- Referral of a Works Approval for Comment		DWER Record: A1753444
11.	City of Rockingham Submission- W6196 New Energy Corporation Waste to Energy Facility		DWER Record: A1755712
12.	Submission- City of Kwinana- Works Approval Application- East Rockingham Waste to Energy Plant		DWER Record: A1759453
13.	New Energy Corporation East Rockingham Waste to Energy Facility- Agreements reached on 12 March 2019		DWER Record: A1771463
14.	European Union Directive 2010/75 On Industrial Emissions (Integrated Pollution prevention and control) (November 2010)	IED	accessed at http://ec.europa.eu/environment/industry/stationary/ied/legislation.htm
15.	EPA Report 1513 East Rockingham Waste to Energy and Materials Recovery Facility (June 2014)		accessed at www.epa.wa.gov.au
16.	EPA Report 1468 Environmental and health performance of waste to energy technologies- Advice of the Environmental Protection Authority to the Minister for Environment under Section 16(e) of the Environmental Protection Act 1986		accessed at www.epa.wa.gov.au
17.	EPA Report 1390 Rockingham Industrial Zone Strategic Environmental Assessment- LandCorp (April 2011)		accessed at www.epa.wa.gov.au
18.	Waste Strategy for WA Waste Authority		Accessed at

	Document title	In text ref	Availability
	March 2012		https://www.wasteauthority.wa.gov.au/media/files/documents/WA_Waste_Strategy.pdf
19.	Landfill Waste Classification and Waste Definitions 1996 (as amended December 2009) Department of Environment and Conservation WA		Accessed at https://www.wasteauthority.wa.gov.au/media/files/documents/landfill_waste_classification.pdf
20.	Ministerial Statement 994		accessed at www.epa.wa.gov.au
21.	Ministerial Statement 1090		accessed at www.epa.wa.gov.au

Attachment 2: Summary of Applicant's key comments on risk assessment and draft conditions

Condition	Summary of Licence Holder comment	DWER response
Condition 9: Emissions Monitoring Table 8 Continuous emission monitoring	• We would like to discuss adding the Waste Incineration Directive; DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions (integrated pollution prevention and control). In terms of the calibration of the FTIR monitor (NH3), we believe it may be better to include a requirement for this to be agreed and resolved in writing prior to commissioning • CEMS Code does not include HCl.	• The Delegated Officer has decided that the CEMS code shall apply to Particulates, NOx, CO and SO2 • The Delegated Officer has decided that the location for HCl, VOCs as Total Organic Carbon and NH3 shall be as per the CEMS code and calibration and operation for HCl, VOCs and Total Organic Carbon and NH3 shall be as per USEPA CFR40: Part 60 and relevant performance specifications. The Department may review this condition in the future when further information regarding the CEMS is available and the Department has had sufficient time to assess potential changes to the CEMS Code.
Condition 10: Emissions Monitoring Table 9 Periodic emission monitoring	• HF USEPA Method 26A- we suggest ISO 15713 • Group I and II metals USEPA Method 29 or 30B- we suggest EN 14385 • Group II metals Hg- we suggest EN 13211 • Speciated and total metals USEPA Method 29- we suggest EN 14385 • Dioxins and Furans USEPA Method 23- EN 1948	The Delegated Officer has decided that the USEPA test methods will be maintained as these methods are currently prescribed in the Selection of Stationary Source Monitoring Methods for Emissions to Air April 2006. Future review will be possible when the department has had sufficient time to review the approved stack testing methods.

Condition	Summary of Licence Holder comment	DWER response
Conditions 21 and 22:Commissioning and time limited operation	Commissioning period 6 months Time limited operation 12 months	The Delegated Officer has made this change in the draft Works Approval.
Definitions	Insert definition of Books	As the definition of books is defined in the EP Act a doubling up of this is not required.
Definitions	Add definitions for mg/m^3, ng/m^3 and Normal m^3	Agreed
Authorised emissions tables	Requested a change of order of authorised emissions tables and to amalgamate the tables to improve readability.	Not agreed as it would take too much time to rearrange the layout and order of tables including changing conditions.
Table 4	Requested removal of HF from Authorised Emissions – Parameters Measured with CEMS table and put the limit for HF in the Authorised Emissions – Parameters Measured Manually by Stack Testing.	Agreed.
Note under Table 3	The note should refer to Table 3, not Table 2	Agreed
Table 10	Some minor rewording of the equipment.	Agreed
Condition 21 and 22	Change commissioning period to 8 months and total operating period under Works Approval to 10 months.	Agreed

Attachment 3: Figures

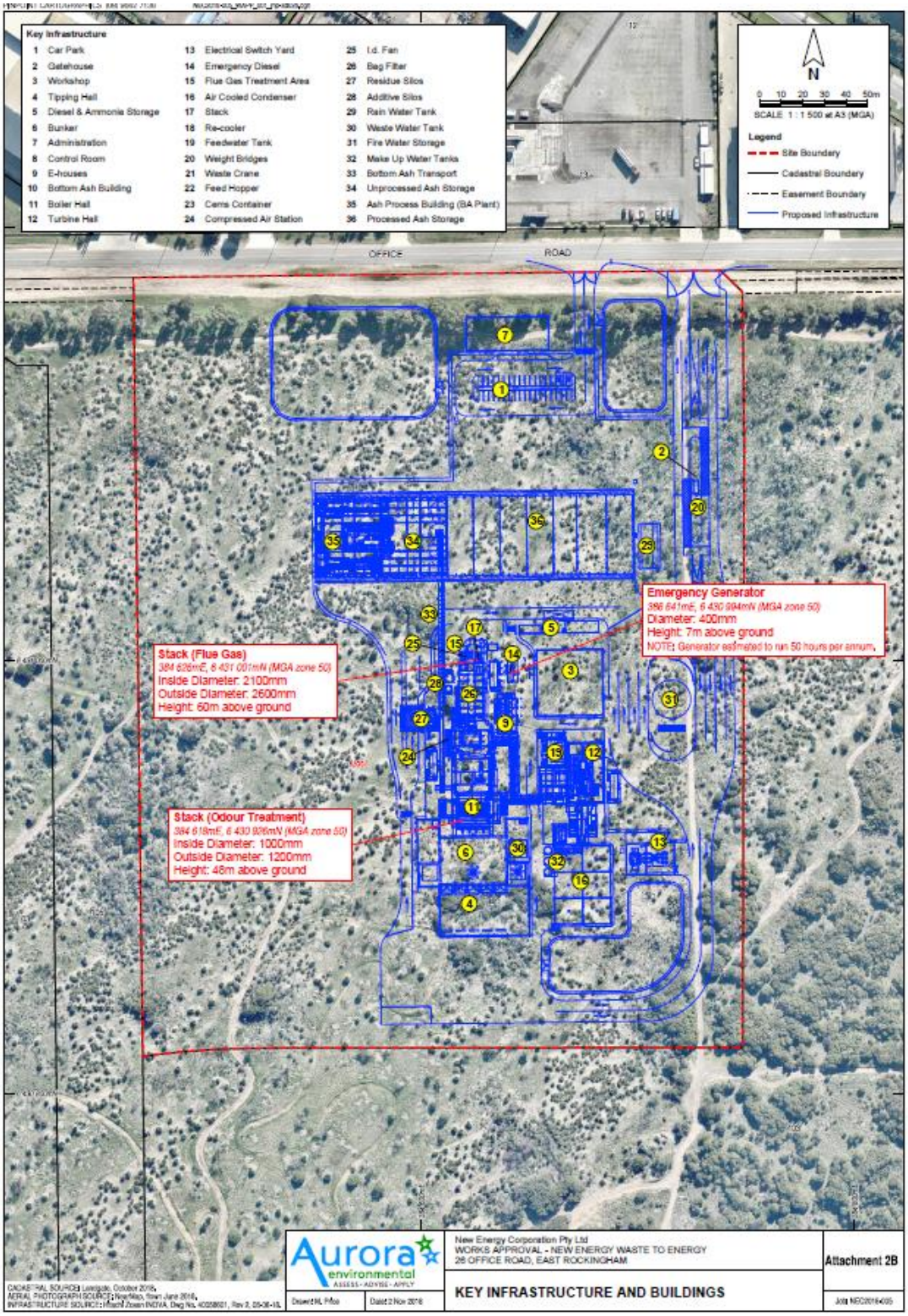
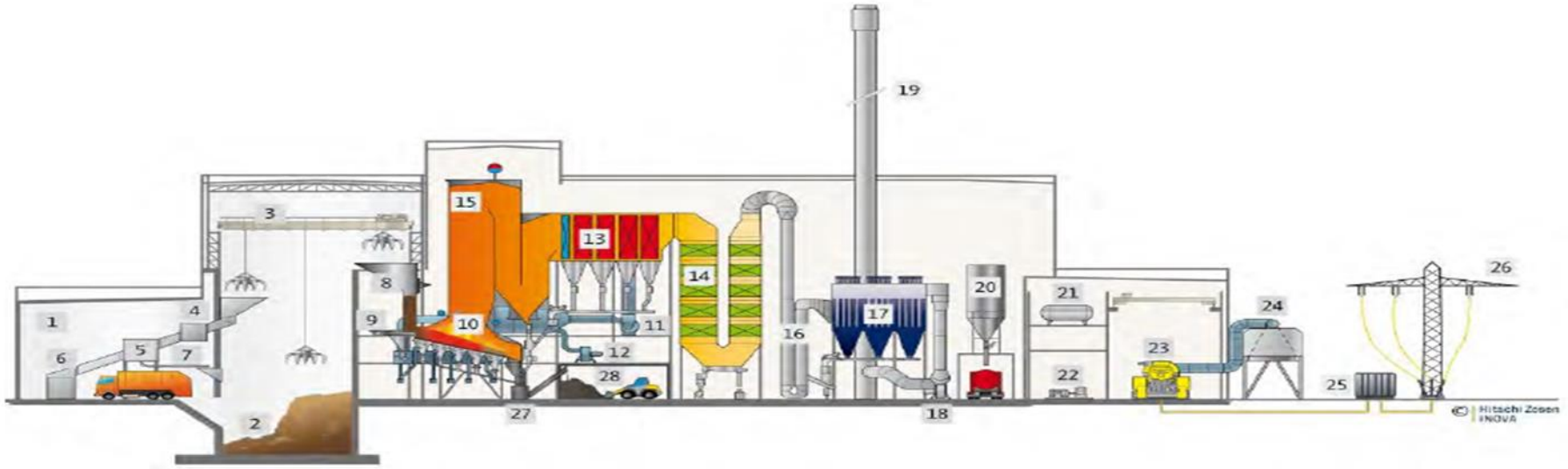


Figure 2: Site lay-out



Waste Delivery and Storage	Combustion and Boiler	Flue Gas Treatment	Energy Recovery	Residue Handling and Treatment
1 Delivery hall	8 Feed hopper	15 Ammonia injection	21 Feed water tank	27 Bottom ash extractor
2 Waste bunker	9 Ram feeder	16 Xerosorp Lime	22 Feed water pump	28 Bottom ash storage
3 Waste crane	10 HZI grate	17 Fabric filter	23 Condensing turbine	
4 Shredder	11 Primary air fan	18 Induced draught fan	24 Air cooled condenser	
5 Mechanical waste pretreatment	12 Secondary air fan	19 Stack	25 Transformer	
6 Baling	13 Six-pass boiler	20 Silos	26 Electricity export	
7 Pretreated waste conveyor	14 Economiser			

Figure 3: Process diagram of key stages

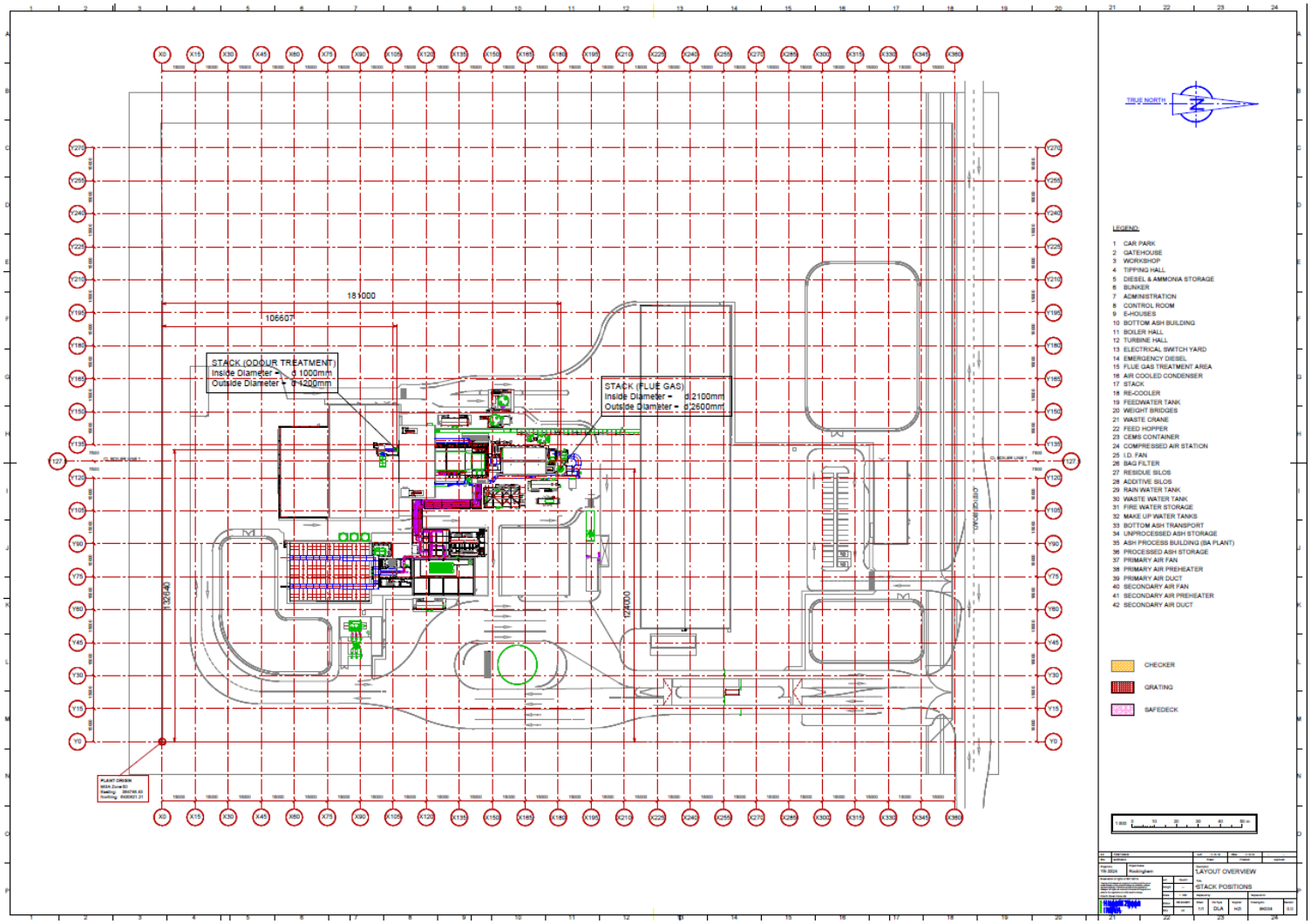
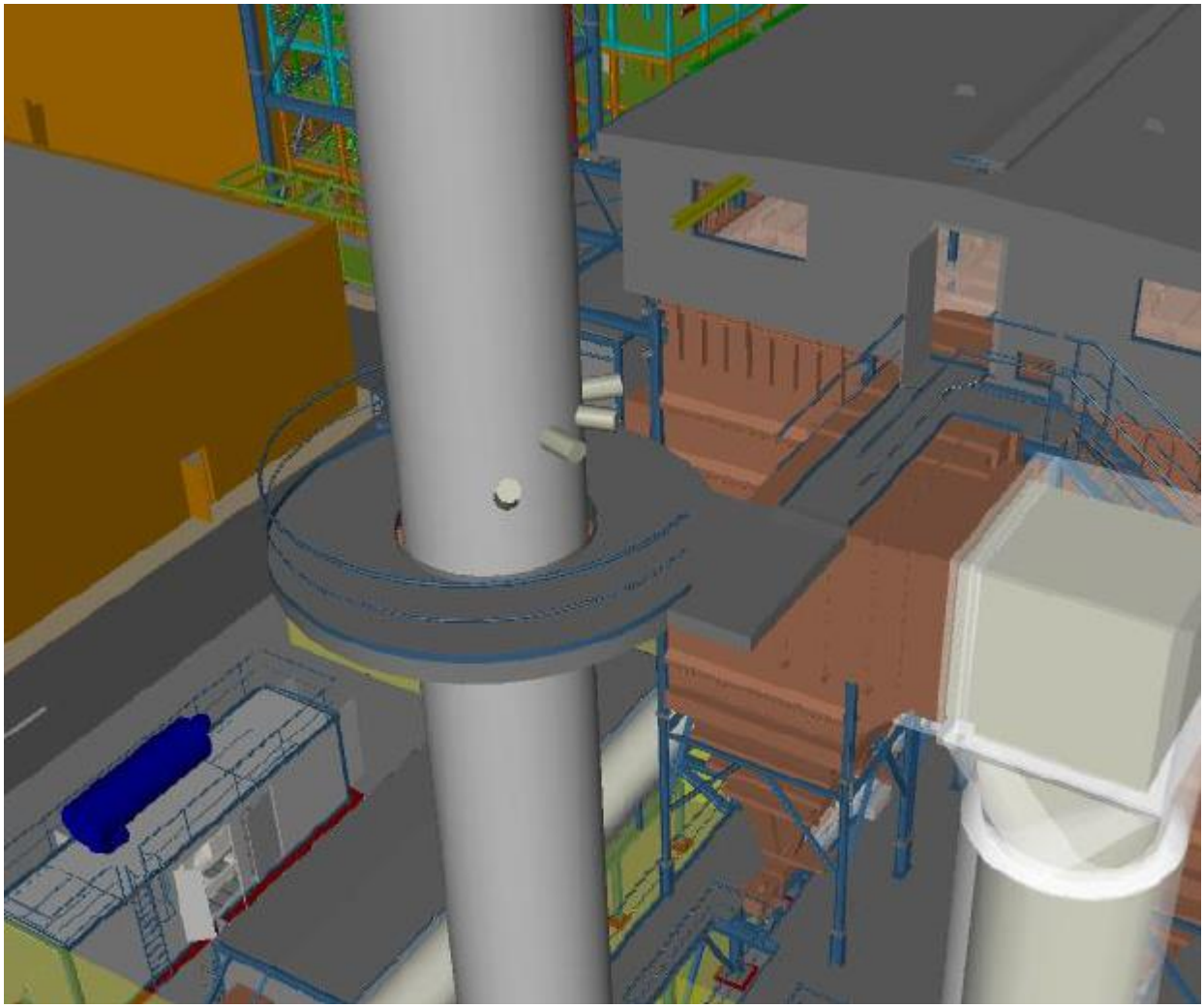
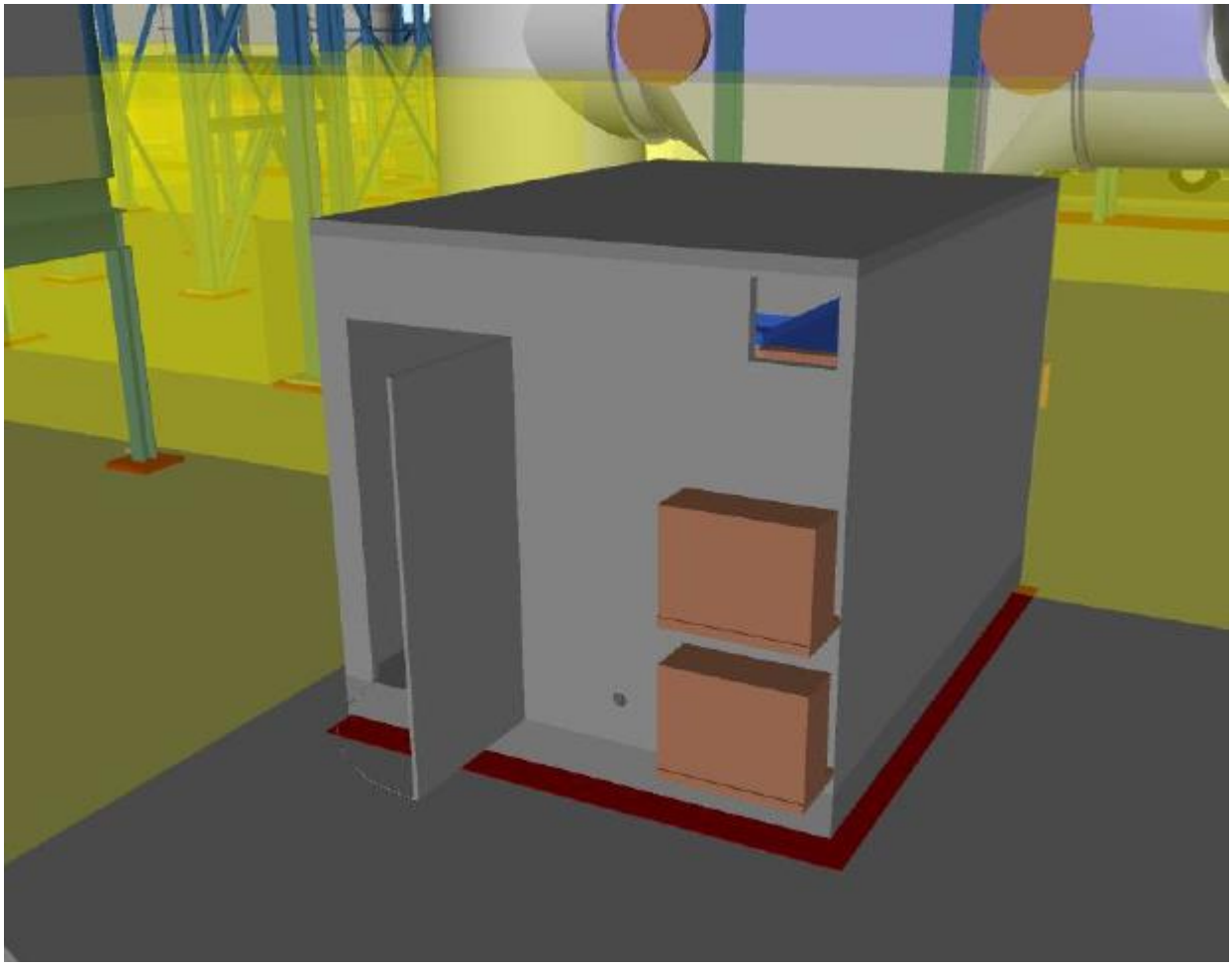


Figure 4: Stack locations

Attachment 4: Stack testing platform



Attachment 5: CEMS analysis enclosure



Attachment 6: Summary of stakeholder comments on the application

Summary of stakeholder comment	DWER response
Respondent 1	
Flora and vegetation • Revised flora and fauna survey should be undertaken to reassess if any TECs or threatened/priority flora exist within the site or are likely to occur within the site • A 5km buffer should be used for the Protected Matters search tool as 1km is insufficient.	These matters are not within the scope of the application or the works approval and were not assessed. Flora and vegetation was assessed by the EPA in 2011 (MS994 and EPA Report 1513 (June 2014) and was not considered to be a key environmental factor. It was not identified as a preliminary key environmental factor when the EPA decided to assess the revised proposal. In MS1090 and report 1624 the EPA considered that the impacts are not different to those considered in the original proposal and potential impacts are not likely to be significant due to the modified state of the site and limited amount of clearing required. Therefore the EPA did not consider Flora and Vegetation to be a key environmental factor at the conclusion of its assessment.
Fauna • Fauna survey should be updated with revised database searches and targeted surveys for conservation significant species that have the potential to occur within the site which were not considered in the previous surveys • A 5km buffer should be used for the Protected Matters search tool as 1km is insufficient • A Fauna relocation management plan should be prepared due to the amount of proposed vegetation clearing	These matters are not within the scope of the application or the works approval and were not assessed. Terrestrial fauna was assessed by the EPA in 2011 (MS994 and EPA Report 1513 (June 2014) and was not considered to be a key environmental factor. In Report 1624 the EPA considered that the impacts would not be different to the original proposal. Therefore the EPA did not consider Terrestrial fauna to be a key environmental factor at the conclusion of its assessment.
Air quality • Characterisation of emissions from all stages should be considered (including upset, planned maintenance and unplanned shutdown) • Emissions from diesel generators should also be quantitatively assessed	These matters were assessed by the EPA. See EPA Report 1624, key environmental factors: Social Surroundings and Air Quality—which captures these. They have not been re-assessed in the works approval process.

Summary of stakeholder comment	DWER response
• A health risk assessment is “standard practice” for this type of facility although there is no WA or national legislation requiring such an assessment • Potential for cumulative impacts from existing and approved industries that emit air pollutant common to the project should be assessed • Ground level concentrations at residential locations or public open spaces identified in the Rockingham Industry Design Framework should be included • The dispersion modelling configuration should be detailed to determine suitability of TAPM and CALMET/CALPUFF • Meteorological conditions are reliably represented (e.g. include a summary and analysis of meteorological data) **Odour** • It is possible that maintenance and unplanned shutdown will cause nuisance based on predicted odour concentrations approx. 750m west, north and northeast of the project site exceeding odour guidelines **Greenhouse gas assessment** • A detailed explanation of the methodology and cross referencing of assumptions including consistency in annual quantities of waste is needed • The avoided emissions component should be revised to more accurately reflect the impact of the project **Noise** • Assumptions regarding the number and design of the buildings should be reviewed • Detailed source sound power level data is important including likely tolerances for each level and the overall level of noise emission to the community • A clear statement of the level of confidence in the prediction of environmental noise impacts should be included	The *Environmental Protection (Noise) Regulations 1997* apply.
Respondent 2	
Location • Respondent is of the opinion that given the prevailing wind direction in the area, during plant shutdown or facility down time, the proposal has the potential to negatively impact the air quality of residents in Calista, Leda and Medina from fugitive gas and odour emissions • Respondent considers more safeguards should be put in place in the event the proposed mitigation measures do not ensure odour levels beyond the boundary are kept to non- nuisance levels at all times	These matters were assessed by the EPA. See EPA Report 1624, key environmental factors: Social Surroundings and Air Quality—which captures these. They have not been re-assessed in the works approval process.
Odour management • Respondent has previously raised concerns regarding the odour contour of 2.5 odour units up to 750m from the facility (unacceptable) and all measures should be taken to reduce this as much as possible.	These matters were assessed by the EPA. See EPA Report 1624, key environmental factors: Social

Summary of stakeholder comment	DWER response
• Respondent considers that the proposed mitigation measures should be implemented from the time operations commence and further measures be undertaken if exceedances are found • It is also recommended that the proponent undertake field assessments outside of the boundary for the life of the development • Respondent also recommends that the proponent implement a public odour complaints register and resolution procedure to address public concerns. The proponent shall also make a copy of the register available to DWER quarterly	Surroundings and Air Quality—which captures these. They have not been re-assessed in the works approval process. An odour complaint condition has been added to the Works Approval.
Noise • Residents in the vicinity of Westbrook Rd, Wellard Rd, Edmund Place, Coleman Road and Harrison Way Calista as well as residents in Sloan Drive and Mercer Court in Leda are modelled as receiving sound level impacts in the 25-30 decibel range. A 5 dB error margin combined with a 5 dB tonal component identified as part of the flue gas emissions (but discounted in the noise modelling) would result in exceedances of the EP Noise Regulations assigned night time levels. Respondent is of the opinion that further design consideration and mitigation be given to treat the flue gas stack to ensure tonal characteristics are eliminated or minimised to avoid the risk of noise impacting on residences in Calista and Leda • Respondent recommends that the proponent provide certification from a suitably qualified acoustic consultant confirming that the noise from operation on the site comply with the EP Act and Regulations • The certification shall demonstrate that at all times for the life of the plant will comply with the Noise Regulations from commencement of operations through to maximum throughput capacity. In addition the proponent is to undertake works to address any outcomes from the certification by the acoustic consultant and maintain compliance with the certification requirements at all times	These matters were assessed by the EPA. See EPA Report 1624, key environmental factors: Social Surroundings and Air Quality—which captures these. They have not been re-assessed in the works approval process. The *Environmental Protection (Noise) Regulations 1997* apply.
Air quality • Respondent has concerns with certain aspects of the air quality modelling with particular regard to any potential fugitive emissions during emergency shutdown scenarios. These emissions may be released untreated and then subject to south west prevailing winds will blow towards residential areas • Respondent considers that any potential fugitive emission releases during emergency shutdown periods should be modelled and adequately addressed and considered as part of the works approval process • Respondent recommends that the proponent make near to real time data on emissions publicly available via their website and at the entrance. This is considered appropriate given the uncertainty regarding the potential fugitive emissions during emergency shutdown scenarios • It is recommended that monitoring frequency for dioxins and furans be carried out every 3 months for the life of the project	These matters were assessed by the EPA. See EPA Report 1624, key environmental factors: Social Surroundings and Air Quality—which captures these. They have not been re-assessed in the works approval process. Monitoring conditions and limits have been added to the Works Approval consistent with MS 1090 and the IED.
Waste management	In Ministerial Statement 1090 Waste management is regulated through Waste Acceptance Criteria and a requirement for a Waste Acceptance Monitoring and

Summary of stakeholder comment	DWER response
• Respondent recommends that a Waste Management Plan that addresses the management and maintenance of fugitive waste generated on site or from trucks entering/exiting the plant be submitted and approved by DWER prior to occupancy • The Waste Management Plan should include a chain mesh fence capable of capturing all rubbish. Upon commencement of operations the Waste Management Plan shall be implemented and maintained for the life of the plant.	Management Plan to be submitted to the requirements of the CEO prior to commissioning. In addition as all waste will be delivered through enclosed trucks and waste is discharged inside the receival hall it is unlikely that fugitive waste will occur. As such the Delegated Officer does not consider that at the moment the type of condition indicated in the comments is necessary. However, if during operation of the premises this issue arises then, the Delegated Officer can amend approval conditions.
Dust management • A Construction Environmental Management Plan is required to be prepared and implemented as part of the works approval to ensure dust emissions are controlled at all times during the construction period and the EPA air quality objectives are also met at all times	This matter was assessed by the EPA. See EPA Report 1624, key environmental factors: Social Surroundings and Air Quality—which captures this. It has not been re-assessed in the works approval process.
Respondent 3	
Jobs The Department of Jobs is said to be supportive of the project. Figures provided by the proponent indicate that the ongoing jobs created by this project are far fewer than could be created by the implementation of a thoroughly elaborated recycling program of the kind operating in San Francisco and other cities.	This matter is beyond the scope of a works approval.
Omission of Vital Emission Attachment 6B Table 1 Presumably the largest part of the 200 tonnes per hour of gas emissions from the New Energy Incinerator is CO_2. In spite of global and local community concerns about emission of CO_2 and in spite of the acknowledgement that our atmosphere has been at 500 ppm of CO_2 equivalents for over one year now (CSIRO Report on Climate 20 December 2018), it is a serious omission that there is no mention of emissions of CO_2 from both the incineration process itself and the diesel engines necessary for supply of feedstock, handling feedstock within the plant and removal of resultant wastes. Such an omission casts doubt on the scope, effectiveness and value of environmental review processes.	This matter was assessed by the EPA. See EPA Report 1624, key environmental factors: Social Surroundings and Air Quality—which captures this. It has not been re-assessed in the works approval process.
Emissions from Stack (Flue Gas) page 14, 19, 20, Attachment 6B It is noted that 200 tonnes per hour will be emitted from the stack, presumably this is after the controls proposed. It is also noted that under Part 3 Waste no discharge rates for either gases or metals and compounds or waste that can accumulate in the environment or living tissue in grams/minutes are enumerated. When one reads Table 1 in Attachment 6A one finds a list of 22 emittants including nitrous oxides, particulate matter, TOCs, mercury and lead! It is not acceptable that the proponent pays nothing for the admitted pollutants emitted into the air that is breathed by	Once the site is licensed the Licence Holder will pay an annual fee for emissions and discharges to the environment as specified in Regulation 5DA of the EP Regulations. The annual fee is the sum of a premises component, a waste component and a discharge component.

Summary of stakeholder comment	DWER response
up to 12,000 workers on the Kwinana strip or the 10,000 residents living down wind in Leda, Medina and Calista.	
Moreover the Emission rates from the Main Stack of all 22 emittants add up to around 30 grams per second. The table contains one line that is unreadable and also a possible typo - what are 'ng/s'? That rate comes to 1.8kg/minute and 108kg/hour. No account has been made of the accumulating effects of another incinerator a mere five kilometers away. In spite of the statement that this NEC incinerator is compliant with the IED, no evidence is presented for the safety of these emissions on people working nearby or residents downwind. To this member of the community **EPA assessment has not been credible.**	This matter was assessed by the EPA. See EPA Report 1624, key environmental factors: Social Surroundings and Air Quality—which captures this. It has not been re-assessed in the works approval process.
The list of projects in Attachment 8 has not been provided in the online copy of the proponent's application. The application ends with Attachment 6B. It is further noted that the online version of the Application fails to include Attachment 2C, 7 and *, Section 4.3.2.1. Without this additional information it is difficult to comment definitively.	Attachment 8: East Rockingham Waste to Energy Facility-Environmental Review Document Assessment No. 2116 was made available to the public through the Part IV process. An application can be made to the Department and the document provided. Alternatively, please contact Aurora Environmental for a copy of the document. Attachments 2C, 7 and Section 4.3.2.1 can be found in Attachment 8.
Particulate Emissions It is noted that Table 1 recognises Particulate Emissions from the Main Stack and the next table recognises them from the Standby Diesel Generator. The EPA is to be congratulated on requiring this identification of "key emissions". However nowhere is there any recognition of particulate emissions from the trucks bringing feedstock to the incinerator or removing bottom ash from it. Neither is there any recognition of the diesel from heavy equipment operating within the plant. Yet the time that the standby diesel will operate is specified at 50 hours a year. The omission of complete Particulate Emission accounting for the project is a major flaw to protecting the surrounding environment from harm.	This matter was assessed by the EPA. See EPA Report 1624, key environmental factors: Social Surroundings and Air Quality—which captures this. It has not been re-assessed in the works approval process.
Minimisation of Sensitive Land Uses 10.1, 10.4, 11.1 It is noted that the four residential suburbs within 2.5 or 2.7km of the site are 'sensitive land uses' but it is not clear why the proponent has been given approval to emit pollutants that "may" affect the residents. This is particularly egregious given approval to another plant, Phoenix Energy's incinerator, which is admitted to produce the same cocktail of toxic pollutants. Failure of the EPA to require greater protection for these residents is deeply disappointing. And given what is currently known about the impacts of expected pollutants on human health, is, I dare say, “likely to be regretted in future.”	This matter was assessed by the EPA. See EPA Report 1624, key environmental factors: Social Surroundings and Air Quality—which captures this. It has not been re-assessed in the works approval process.
Odour Treatment	

Summary of stakeholder comment	DWER response
Stack (Odour Treatment): Method of dealing with odours during incinerator shutdown (or startup) is inadequate. During incinerator shutdown no controls are proposed other than dispersion from an auxiliary stack which has a nominal capacity of 10,000 cubic metres/hour. It is inconceivable that the shutdown from high temperatures will be instantaneous. No figures are given for how long cool-down period would be, nor for the warm-up period.	This matter was assessed by the EPA. See EPA Report 1624, key environmental factors: Social Surroundings and Air Quality—which captures this. It has not been re-assessed in the works approval process.
Monitoring of Waste Accepted 9.2, ATTACHMENT 3A 1.6, 1.8 It is inconceivable that inspection under such circumstances as described could be adequate. It is reasonable to assume that the daily tonnage received would be around 1,000 tonnes. Assuming receival for 12 hours a day that is 83 tonnes an hour. The claim that inspection will "prevent excluded wastes" is a clear overstatement: more appropriate word would be 'minimise' or 'reduce'. Evidence of this is clear from the emissions data. More specifically how will inspectors identify PCBs or organochlorine wastes or acids, chlorine and fluorine, explosives, radioactive wastes? What procedures would there be for containers without labels? For public health and safety to be protected the EPA needs to ensure that inspection methods capable of dealing adequately with municipal, residual, commercial and recovery waste solid waste to be described are specified and are certified as adequate.	In Ministerial Statement 1090 Waste management is regulated through Waste Acceptance Criteria and a requirement for a Waste Acceptance Monitoring and Management Plan to be submitted to the requirements of the CEO prior to commissioning. This matter was assessed by the EPA. See EPA Report 1624, key environmental factors: Social Surroundings and Air Quality—which captures this. It has not been re-assessed in the works approval process.
It should be specified that further monitoring of inspection should be done without notice so that there is some face validity to the claims of excluding non-processible waste.	In Ministerial Statement 1090 Waste management is regulated through Waste Acceptance Criteria and a requirement for a Waste Acceptance Monitoring and Management Plan to be submitted to the requirements of the CEO prior to commissioning. This matter was assessed by the EPA. See EPA Report 1624, key environmental factors: Social Surroundings and Air Quality—which captures this. It has not been re-assessed in the works approval process.
Attachment 3A Proposed activities reinforces concerns over the lack of adequate monitoring. Section 1.6 *"The process is described as follows: wastes are brought to the facility by truck. The trucks will first pass the weighbridge, then drive to the tipping hall and unload the waste into the bunker.... Waste is thoroughly mixed in the bunker by an overhead crane and fed into the feed hopper of the combustion line. ...".* The public are left to conclude that monitoring is not uppermost in the mind of the proponent, in fact is it nowhere ! No mention is made of the number of workers in the tipping hall or of their roles. How any monitoring of 8 tonnes of waste tipped into a bunker every 6 minutes (calculations based on the PER) could be done to detect excluded materials let alone stop the process to remove them is beyond me.	In Ministerial Statement 1090 Waste management is regulated through Waste Acceptance Criteria and a requirement for a Waste Acceptance Monitoring and Management Plan to be submitted to the requirements of the CEO prior to commissioning. This matter was assessed by the EPA. See EPA Report 1624, key environmental factors: Social Surroundings and Air Quality—which captures this. It has not been re-assessed in the works approval process.
The later explanation (1.8) provides only partial reassurance. *"Waste will only be unloaded outside the receival bunker when there is reason to believe that the vehicle is carrying non-processible*	In Ministerial Statement 1090 Waste management is regulated through Waste Acceptance Criteria and a

Summary of stakeholder comment	DWER response
waste. If this occurs, the waste in question will be tipped on the receival hall to allow its contents to be more closely assessed. If such loads are found to contain unsuitable wastes, the waste will be placed back into a covered truck and directed back to its point of origin or directed off to a suitable licensed disposal facility. One could argue that it is almost certain that every load particularly of MSW could contain "non-processible waste" and should therefore be tipped on the floor. Such a situation would bring the plant to a halt and one could not see the proponent agreeing to many interruptions. Data from one city's waste department for 2017/18 is that the new three bin system is producing waste that is 80% acceptable to the new Chinese criteria for homogeneity. That leaves 20% which does not. From my observations of what some local householders put into their recycling bin it is certain that even these bins will contain "non-processible waste". At the very least there should be presented evidence from other MSW collection in WA of the level of non-processible waste, by which I here mean toxic waste, including batteries, chlorine-based chemicals, smoke alarms.	requirement for a Waste Acceptance Monitoring and Management Plan to be submitted to the requirements of the CEO prior to commissioning. This matter was assessed by the EPA. See EPA Report 1624, key environmental factors: Social Surroundings and Air Quality—which captures this. It has not been re-assessed in the works approval process.
Treatment of Bottom Ash 3A 1.11 Claims for the acceptability of bottom ash as an aggregate in other countries are to be treated with scepticism. Unless more information about source separation, the content of the feedstock, the effectiveness of monitoring for non-processible materials and levels of toxins allowed in aggregates in those countries and how these would compare to those in Australia, this should not be accepted. If DWER does accept the UK standard, will these issues be taken into account?	This matter is beyond the scope of this works approval. Bottom ash will be transferred elsewhere for reprocessing, re-use or disposal.
My understanding of the components of bottom ash is that it contains highly toxic materials requiring a secure waste facility to receive it. The proponent's figures appear to show that 100 tonnes of bottom ash will be produced every day (based on reduction of 90% after incineration). This is a large amount of highly alkaline ash to be dealt with. The method appears merely to be allowing air and water to oxidise the alkalis. How this will be done without harm to the workers and the surrounding buildings and environment should be specified.	This matter was assessed by the EPA (see EPA Report 1513 Air Quality) and therefore has not been re-assessed. This matter is beyond the scope of this works approval. Bottom ash will be transferred elsewhere for reprocessing, re-use or disposal.