Report and recommendations of the Environmental Protection Authority

East Rockingham Waste to Energy revised proposal

New Energy Corporation Pty Ltd

Report 1624

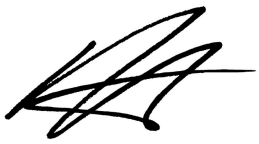
October 2018

Environmental impact assessment process timelines

Date	Progress stages	Time (weeks)
08/03/2017	EPA decides to assess – level of assessment set	
27/07/2017	EPA approved Environmental Scoping Document	20
12/01/2018	EPA accepted Environmental Review Document	24
22/01/2018	Environmental Review Document released for public review	1
19/02/2018	Public review period for Environmental Review Document closed	4
18/07/2018	EPA accepted Proponent Response to Submissions	21
05/10/2018	EPA received final information for assessment	11
15/10/2018	EPA completed its assessment	1
17/10/2018	EPA provided report to the Minister for Environment	2 days
22/10/2018	EPA report published	3 days
05/11/2018	Close of appeals period	2

Timelines for an assessment may vary according to the complexity of the proposal and are usually agreed with the proponent soon after the EPA decides to assess the proposal and records the level of assessment.

In this case, the Environmental Protection Authority met its timeline objective to complete its assessment and provide a report to the Minister.



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Chairman

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1. Introduction

This report provides the advice and recommendations of the Environmental Protection Authority (EPA) to the Minister for Environment on the outcomes of the EPA's environmental impact assessment of the proposal by New Energy Corporation Pty Ltd (NEC). The proposal is to construct and operate a Waste to Energy (WTE) facility in the Rockingham Industrial Zone (RIZ) at Lot 1, 26 Office Road, East Rockingham.

The EPA has prepared this report in accordance with section 44 of the *Environmental Protection Act 1986* (EP Act). This section of the EP Act requires the EPA to prepare a report on the outcome of its assessment of a proposal and provide this assessment report to the Minister for Environment. The report must set out:

- what the EPA considers to be the key environmental factors identified during the assessment
- the EPA's recommendations as to whether or not the proposal may be implemented and, if the EPA recommends that implementation be allowed, the conditions and procedures to which implementation should be subject.

The EPA may also include any other information, advice and recommendations in the assessment report as it thinks fit.

The proponent referred the proposal to the EPA on 27 January 2017. On 8 March 2017, the EPA decided to assess the proposal and set the level of assessment at Public Environmental Review with a four-week public review period. The EPA approved the Environmental Scoping Document (ESD) for the proposal on 27 July 2017. The Environmental Review Document (ERD) was released for public review from 22 January 2018 to 19 February 2018.

1.1 EPA procedures

The EPA followed the procedures in the *Environmental Impact Assessment (Part IV Divisions 1 and 2) administrative procedures 2016* and the *Environmental Impact Assessment (Part IV Divisions 1 and 2) procedures manual 2016*.

1.2 Strategic advice on waste to energy technologies

In April 2013, the EPA and the Waste Authority released their strategic review entitled *Environmental and health performance of waste to energy technologies* (Report 1468, EPA 2013) under section 16(e) of the EP Act.

The review concluded that it had been demonstrated internationally that modern WTE plants could operate within strict emission standards with acceptable environmental and health impacts to the community if a plant is designed and operated using best practice technologies and processes. The EPA supports the establishment of WTE plants in Western Australia subject to proposals

demonstrating adherence to a number of principles outlined in the EPA's section 16(e) advice.

2. The proposal

2.1 Proposal summary

The proponent, NEC, proposes a change (referred to in this report as the 'proposal') to its approved project to construct and operate a WTE and materials recovery facility (MRF) in the RIZ at Lot 1, 26 Office Road, East Rockingham (figures 1 and 2). The EPA had previously assessed the RIZ as a Strategic Environmental Assessment to identify an appropriate development footprint for future industrial development, while retaining an area as a conservation reserve.

The approved project consists of the existing approved proposal:

- East Rockingham Waste to Energy and Materials Recovery Facility (Ministerial Statement 994, 20 January 2015) to build and operate a WTE and MRF on Lot 1, Office Road, 3 km north-east of Rockingham.

The proposed change includes changing the technology from WtGas-Res gasification to Hitachi Zosen Inova (HZI) grate combustion. The waste would be transported to the facility by truck and passed through to the HZI combustion grate. Flue gas produced through the combustion line then passes through a water tube boiler where it is cooled while the water of the closed water steam cycle is superheated. The superheated steam is expanded through a turbo generator to produce electricity (Figure 3).

The maximum capacity of the plant is 101.8 Megawatt Thermal (MWt), which will generate 31.4 Megawatts (MW) of electricity. Of this, 3.2 MW is required to operate the plant and the remaining 28.2 MW will be exported to the South West Interconnected System. It is proposed that the facility would operate for 30 years.

The grate combustion system is designed for mixed wastes and 10 per cent sewage sludge. The facility would accept residual municipal solid waste (MSW) from a two- or three-bin kerbside collection system; residual waste from point-of-origin collection programs and off-site facilities that process municipal solid waste; recyclables; commercial and industrial (C&I) waste; construction and demolition (C&D) waste; and sewage sludge.

The revised proposal includes an increase to the waste throughput, and removal of the MRF. It also adds a bottom ash treatment plant. Bottom ash generated from the combustion of waste would be treated for reuse in the construction industry or as cover material. Should the treated materials not be suitable for aggregate use, it would be disposed at an appropriately licensed Class III landfill.

The proposed change comprises the following additional activities and/or elements:

- changing the technology from WtGas-Res gasification to HZI grate combustion
- increasing the waste throughput from 225 000 tonnes per annum (tpa) to 300 000 tpa
- accepting up to 30 000 tpa of sewage sludge for processing

- increasing the thermal capacity of the plant from 72 MWt to 101.8 MWt
- removal of the MRF for the sorting of MSW
- construction and operation of a bottom ash treatment plant to treat up to 68 880 tpa of bottom ash.

The key characteristics of the revised proposal (i.e. the amalgamation of the existing approved project and the proposed change) are summarised in tables 1 and 2 below. A detailed description of the proposed change in relation to the existing approved project is provided in Section 2 of the ERD (Aurora Environmental 2017).

In undertaking this assessment, the EPA has assessed the impacts of the proposed change in the context of the approved project, considering the cumulative impacts of the entire revised proposal where appropriate.

Table 1: Summary of the proposal

Proposal title	East Rockingham Waste to Energy revised proposal
Short description	The proposal is for the construction and operation of a WTE facility at Lot 1, 26 Office Road, East Rockingham. The WTE facility comprises: • a reception hall • waste bunker • combustion system • boiler • bottom ash handling and treatment area • other associated infrastructure.

Table 2: Location and proposed extent of physical and operational elements

Element	**Location**	**Existing approval** **(Ministerial Statement/s and other regulatory approvals)**	**Proposed change** **(this proposal)**	**Proposed extent** **(revised proposal)**
Physical elements				
Waste to energy facility	Figure 2	Clearing of no more than 10 ha of native vegetation within the development envelope	No change	No change

Element	Location	Existing approval (Ministerial Statement/s and other regulatory approvals)	Proposed change (this proposal)	Proposed extent (revised proposal)
Operational elements				
Thermal capacity		No more than 72 MWt	Up to an additional 29.8 MWt	No more than 101.8 MWt
Waste receival volume		Up to 225 000 tpa	Up to an additional 75 000 tpa and up to 30 000 tpa of sewage waste	Up to 300 000 tpa and up to 30 000 tpa of sewage waste
Emissions outputs		Shall not exceed the emissions limits specified in Annex V of the European Union Waste Incineration Directive 2000/76 or its updates	European Union Waste Incineration Directive 2000/76 has been superseded by the European Union Industrial Emissions Directive 2010/75/EC	Shall not exceed the emissions limits specified in Annex VI of the European Union Industrial Emissions Directive 2010/75/EC or its updates
Waste types permitted to be processed		• Construction and demolition waste • Commercial and industrial waste • Municipal solid waste • Green waste • Non-recyclable residues from material recycling facilities, waste transfer stations/depots and biological waste treatment facilities	Biosludge/ biosolids now included and green waste removed	• **Biosludge/ biosolids** • Construction and demolition waste • Commercial and industrial waste • Municipal solid waste • Non-recyclable residues from material recycling facilities, waste transfer stations/depots and biological waste

Element	Location	Existing approval (Ministerial Statement/s and other regulatory approvals)	Proposed change (this proposal)	Proposed extent (revised proposal)
				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 • Waste with a halogen content greater that 1% • Highly corrosive or toxic liquids or gases such as strong acids or chlorine or fluorine • Explosive materials	Clarification on the restriction of hazardous waste with more than 1% of halogenated organic substances	• 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 that 1% • Highly corrosive or toxic liquids or gases such as strong acids or chlorine or fluorine • Explosive materials

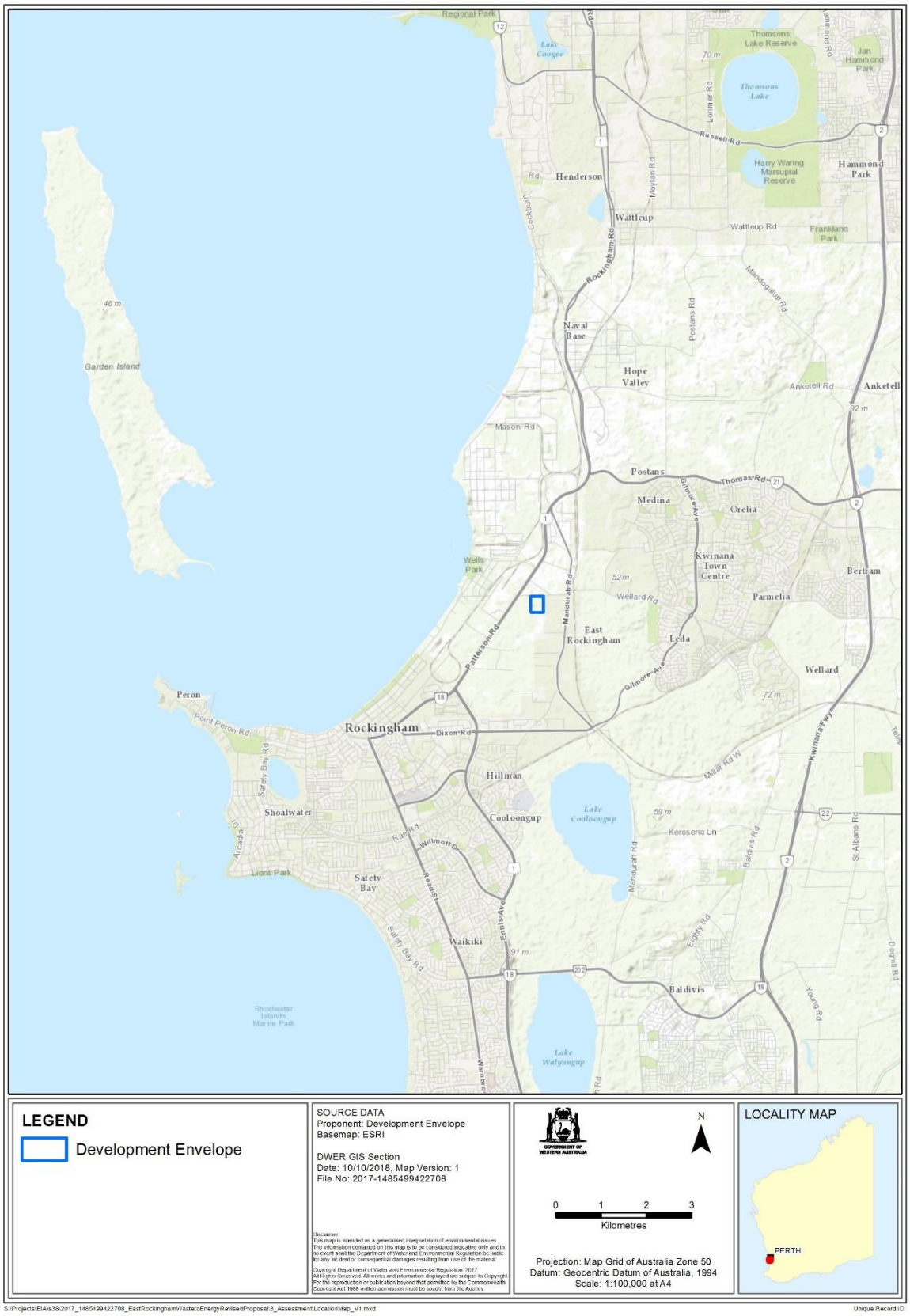

Figure 1: Regional location

Figure 2: Development envelope

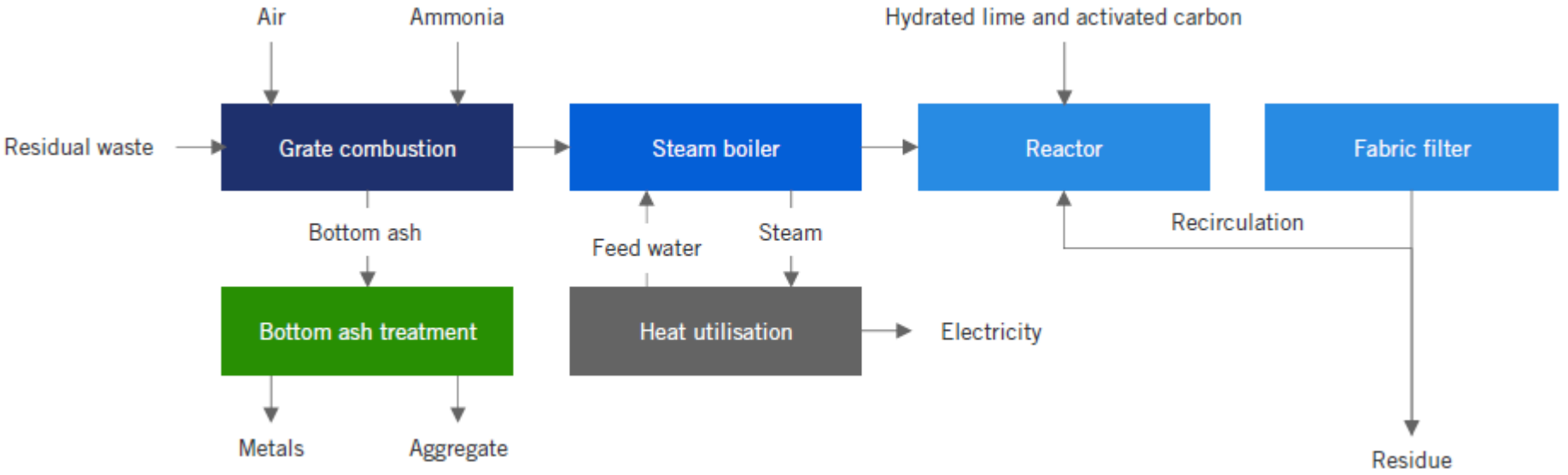

Figure 3: Process flow

2.2 Context

Change from original proposal

Since environmental approval of the original proposal in January 2015, there have been changes in waste management practice and the demand for commercially proven technology from local councils. Consequently, the proponent has requested to change the proposal from the Entech gasification technology to the HZI grate combustion technology.

The HZI grate combustion technology is proven and is in commercial operation around the world, with more than 500 reference plants. The HZI technology has been used at numerous facilities of a similar and larger scale than the proposal. This is consistent with the EPA and Waste Authority's strategic advice on WTE technologies (2013) that only proven technology components should be accepted for commercially operating WTE plants.

NEC advised that local councils have indicated a preference for MSW to be sorted on the curbside through a three-bin system, rather than a dedicated MRF. Consequently, the revised proposal no longer includes a MRF.

The EPA notes that not all local governments currently have a three-bin system in place, and consequently NEC has proposed to receive residual MSW through either a two- or three-bin collection system.

The state government's Better Bins Program supports local governments to improve source separation and material recovery rates, and the EPA notes that the three-bin system is likely to be adopted by additional councils in the future.

In November 2017, the Minister for Environment directed the EPA to undertake an inquiry under section 46 of the EP Act, into the waste feedstock of approved WTE proposals, specifically in relation to the acceptance of genuine 'residual waste' in accordance with the waste hierarchy as defined in the *Waste Avoidance and Resource Recovery Act 2007* (WARR Act). The EPA has considered the findings of the inquiry during this assessment.

New South Wales decision for Eastern Creek Energy from Waste Facility

On 19 July 2018, the New South Wales (NSW) Department of Planning and Environment refused Next Generation NSW Pty Ltd's proposal to construct and operate the Eastern Creek Energy from Waste Facility. The EPA notes that the Eastern Creek proposal intended to use the same HZI grate combustion technology as the East Rockingham WTE revised proposal.

The EPA has considered the key elements of the Eastern Creek proposal and notes that various elements differed from the East Rockingham revised proposal. The Eastern Creek proposal is for processing up to 1.105 million tpa of residual waste, is located 900 m from the nearest residential sensitive receptors, and would be processing some hazardous waste streams including floc waste. The NSW

government also determined that the waste feedstock was inconsistent with the WARR Act and its policy on energy from waste.

The East Rockingham proposal, on the other hand, would process up to 330 000 tonnes of residual waste and sewage sludge, is located 2.3 km from the nearest residential sensitive receptors, and would not be processing hazardous waste streams. The EPA has also considered the proposal in the context of a circular economy and ensuring that only genuine residual wastes are accepted, consistent with the waste hierarchy described in the WARR Act.

3. Consultation

The EPA advertised the referral information for the proposal for public comment in January 2017 and received five submissions, all of which requested 'Assess – Public Environmental Review'.

The proponent consulted with government agencies and key stakeholders during the preparation of the ERD. The agencies and stakeholders consulted, the issues raised and the proponent's responses are detailed in Table 21 of the proponent's ERD (Aurora Environmental, December 2017).

Eight agency submissions and 11 public submissions were received during the public review period. The key issues raised relate to the following:

- appropriateness of the proposal location
- consistency with the government's waste management policy
- potential contamination risk to groundwater
- impacts to human health from air emissions
- potential noise and odour impacts on sensitive receptors
- adequacy of the consultation process.

Issues raised were addressed by the proponent in the Response to Submissions document (Aurora Environmental 2018).

The EPA considers that the consultation process has been appropriate and that reasonable steps have been taken to inform the community and stakeholders about the proposed development. Relevant significant environmental issues identified from this process were taken into account by the EPA during its assessment of the proposal.

4. Key environmental factors

In undertaking its assessment of this proposal and preparing this report, the EPA had regard for the object and principles contained in s4A of the EP Act to the extent relevant to the particular matters that were considered.

The EPA considered the following information during its assessment:

- the proponent's referral information and ERD (Aurora Environmental 2017)
- public comments received on the referral, stakeholder comments received during the preparation of the proponent's documentation and public and agency comments received on the ERD
- the proponent's response to submissions raised during the public review of the ERD (Aurora Environmental 2018)
- the EPA's own inquiries
- the EPA's *Statement of environmental principles, factors and objectives*
- the relevant principles, policy and guidance referred to in the assessment of each key environmental factor in sections 4.1 to 4.2.

Having regard to the above information, the EPA identified the following key environmental factors during the course of its assessment of the proposal:

- **Air Quality** – impacts to air quality from the generation of emissions during operation of the facility.
- **Social Surroundings** – potential noise and odour impacts from construction and operation activities associated with the proposal.

The EPA considered other environmental factors during the course of its assessment of the proposal. These factors, which were not identified as key environmental factors, are discussed in the East Rockingham WTE revised proposal ERD (Aurora Environmental 2017). Appendix 4 contains an evaluation of why these other environmental factors were not identified as key environmental factors.

Having regard to the EP Act principles, the EPA considered that the following principles were particularly relevant to its assessment of the proposal:

1. **The principle of intergenerational equity** – the proposal would be contributing to future waste management outcomes.
2. **Principles relating to improved valuation, pricing and incentive mechanisms** – ongoing management of the proposal, including decommissioning, would be the responsibility of the proponent.
3. **The principle of waste minimisation** – the proposal would be recovering wastes that would otherwise be disposed of into landfill to generate electricity.

Appendix 3 provides a summary of the principles and how the EPA considered these principles in its assessment.

The EPA's assessment of the proposal's impacts on the key environmental factors is provided in sections 4.1 to 4.2. These sections outline whether or not the EPA considers that the impacts on each factor are manageable. Section 6 provides the EPA's conclusion as to whether or not the proposal as a whole is environmentally acceptable.

4.1 Air Quality

EPA objective

The EPA's environmental objective for this factor is 'maintain air quality and minimise emissions so that environmental values are protected'.

Relevant policy and guidance

The EPA considers that the following current environmental policy and guidance is relevant to its assessment of the proposal for this factor:

- *Environmental factor guideline – Air Quality* (EPA 2016a)

The considerations for EIA for this factor are outlined in *Environmental factor guideline – Air Quality* (EPA 2016a).

EPA assessment

Existing environment

The proposal is located within the RIZ in East Rockingham. The nearest residential sensitive receptor includes an isolated dwelling located 1.1 km to the north-north-east of Wellard Road. Other residential premises are located 2.3 km east of the site in Medina and Leda, 2.5 km south-west of the site in East Rockingham, and 2.7 km south of the site in Hillman.

Impacts

The proposal has the potential to impact on the air shed through the generation of emissions during operations. Emissions would be released into the atmosphere through the 60 m main stack during normal operations or shutdown and maintenance. The key air pollutants include:

- oxides of nitrogen (NO_X)
- carbon monoxide (CO)
- carbon dioxide (CO_2)
- heavy metals
- acid gases (including hydrochloric acid and sulfur oxides)
- particulates, metals and volatile and semi-volatile organics
- formaldehyde and other hazardous air pollutants, including dioxins and furans and other complex organic compounds.

The proponent commissioned ENVALL (2017) to undertake air dispersion modelling to predict potential impacts from the facility, which included modelling the key air pollutants. Background concentrations for criteria pollutants were obtained from the ambient monitoring report from the Department of Water and Environmental Regulation (DWER) (2017). The nearest monitoring station measuring nitrogen dioxide and sulfur dioxide were from the Rockingham air quality monitoring station, approximately 3 km south-west of the site. The nearest monitoring station for carbon monoxide and particulate matter was the South Lakes air quality monitoring station, approximately 16 km north-north-east of the site.

Table 3 shows the predicted cumulative emissions of some of the key pollutants. The maximum predicted concentration relative to the criterion is the annual average of $PM_{2.5}$ at 92.9 per cent. However, the EPA notes that the proposal would only contribute to 0.4 per cent of the background concentration.

The model results for direct emissions predicted no exceedances of the air quality criteria for ground-level concentrations at the nearest sensitive receptor.

Table 3: Predicted cumulative emissions of common pollutants at sensitive receptors

Emission	Assessment criteria averaging period	Assessment criteria ($\mu g/m^3$)	Direct emissions at sensitive receptors		Cumulative emissions at sensitive receptors	
			Max predicted GLC ($\mu g/m^3$)	% of assessment criteria for GLC	Max predicted GLC ($\mu g/m^3$)	% of assessment criteria for GLC
Nitrogen dioxide (NO_2)	1-hour	246	53.8	21.9%	138	56.1%
Sulfur dioxide (SO_2)	1-hour	570	33.8	5.9%	68.4	12%
Carbon monoxide (CO)	8-hour	10 000	21.9	0.2%	837	8.4%
PM_{10}	24-hour	50	2.17	4.3%	26.5	52.9%
$PM_{2.5}$	1-year	8	0.0338	0.4%	7.43	92.9%

WTE facilities are required to meet the emission criteria specified in the European Union's Industrial Emissions Directive (2010/75/EC) (IED). The EPA notes that the modelling data predicts that emissions from the facility would comply with the IED.

To provide further certainty that emissions generated from the facility would meet the EPA's objective, the EPA engaged with CDM Smith to commission a human health risk assessment (CDM Smith 2018). The assessment considered the likely health risks from the proposed facility and concluded that based on the emissions estimates and emissions controls in place, the proposal is unlikely to impact on the health and wellbeing of sensitive subpopulations or the general public.

Greenhouse gas (GHG) emissions would be produced from the proposed facility. The facility is predicted to produce up to a total of 2 120 522 tonnes equivalent carbon dioxide over 30 years. The EPA notes that comparably, GHG emissions from landfill would produce 11 958 801 tonnes equivalent carbon dioxide.

Monitoring and mitigation

To ensure that emissions meet the relevant air quality standards, the facility would need to incorporate an air pollution control system. Hence the proposed facility is designed with a furnace equipped with a non-catalytic deNOx system to control the emissions of nitrogen oxides, as well as a dry flue-gas cleaning system downstream of the boiler. The dry flue-gas cleaning system involves the injection of hydrated lime into the flue gas, where it neutralises acidic components such as hydrogen chloride, hydrogen fluoride and sulfur dioxide, and injects activated carbon to adsorb dioxins and furans, gaseous mercury and other components. The facility would also have bag filters to trap fine particulate matter.

A Continuous Emissions Monitoring System (CEMS) would be implemented to monitor key emissions, including particulates, carbon monoxide, sulphur dioxide, hydrogen chloride, oxygen, nitrogen oxides, and volatile organic compounds. In the first year of operation, routine stack testing for other compounds would also be done on a quarterly basis, including nitrous oxide, hydrofluoric acid, cadmium, thalium, mercury, antimony, arsenic, lead, chromium, cobalt, copper, manganese, nickel, vanadium, dioxins and furans.

Other regulation

The proposal will be a prescribed premises under Part V (Environmental Regulation) of the EP Act as described in the Environmental Protection Regulations 1987. The proponent would be required to hold a works approval before commencing any works on site, and to hold a licence before any operations begin. Works approvals and licences can include conditions relating to the design and construction of facilities, the installation of pollution control equipment, the emissions criteria or limits that must be complied with, monitoring requirements, waste disposal, and reporting.

Summary

The EPA has paid particular attention to:

- relevant EPA principles, guidance and policy pertaining to Air Quality
- predicted emissions from the air dispersion model, including consideration of cumulative impacts, meeting the relevant air quality standards
- the proposed pollution control measures and monitoring, including the use of a CEMS.

The EPA considers, having regard to the relevant EP Act principles and environmental objective for Air Quality, that the impacts to this factor are manageable and would no longer be significant, provided that implementation of the proposal is consistent with the elements and authorised extent in schedule 1 of the Recommended Environmental Conditions, including:

- limiting the quantity of feedstock to 300 000 tpa of residual waste and 30 000 tpa of sewage sludge

- limiting emissions outputs as specified in Annex VI of the European Union IED (2010/75/EC) or its updates.

The EPA also notes that a works approval and licence is a statutory requirement under Part V of the EP Act. (See other advice in Section 6 below.)

4.2 Social Surroundings

EPA objective

The EPA's environmental objective for this factor is 'to protect social surroundings from significant harm'.

Relevant policy and guidance

The EPA considers that the following current environmental policy and guidance is relevant to its assessment of the proposal for this factor:

- *Environmental factor guideline – Social Surroundings* (EPA 2016b)
- *Guidance statement no. 3 – Separation distances between industrial and sensitive land uses* (EPA 2005)

The considerations for EIA for this factor are outlined in *Environmental factor guideline – Social Surroundings* (EPA 2016b).

EPA assessment

Existing environment

The proposal is located within the RIZ, where numerous industrial sources already exist. An isolated dwelling is located 1.1 km east of the site, and other residential areas are located approximately 2.3 km to its east, south-west and south.

Potential impacts

The proposal has the potential to impact on Social Surroundings during construction and operation. This includes noise generated by operation of the plant and equipment, dust produced from construction, and odour generated from the handling of putrescible waste materials.

Noise

Noise within the building (during operations) is expected to come from the residual reception facility, the generators, and the bottom ash treatment and storage area. The facility is expected to be operating 24 hours a day, seven days a week.

The proponent commissioned Herring Storer Acoustics (2017) to undertake noise modelling for the facility. The modelling predicts that the proposal would be compliant with the allowable limits in the Environmental Protection (Noise) Regulations 1997, including night times.

Odour

The proposal will be handling putrescible waste materials including MSW, which can produce odour as the waste decomposes. The main source of odour would be the tipping hall when doors are used during waste delivery, and through the 48 m shutdown stack used to vent internal odours from the waste bunkers when the combustion system is not operating.

ENVALL (2017) undertook an odour emissions assessment for the facility using the CALPUFF model to predict ground-level concentrations of odour emissions from the receival hall and the shutdown stack.

The model predicts that during normal operations, the residential criteria for odours would not be exceeded outside of the site. During normal operations, air is taken from the bunker and fed into the combustion system, where odorants from the waste are completely oxidised. Odour emissions are considered to be negligible and to meet the relevant residential criterion for odours.

During combustion system shutdown, the model predicts that the residential criteria is exceeded approximately 748 m from the site; however, the residential criteria is not exceeded at any actual residential areas located 2.3 km from the site. During both planned and unplanned system shutdown, the auxiliary forced ventilation system is activated and truck doors will be periodically open for continued waste deliveries. The EPA notes that unplanned shutdowns are expected to occur less than 9 per cent of the time.

Dust

The proponent expects that impacts from dust during construction would be temporary, localised and have a low impact on local amenity. Dust impacts during operation are likely to be negligible as operations would occur within an enclosed building.

Mitigation and management

Noise

To ensure that noise is appropriately managed, the proponent would be restricting construction work from 7am to pm on Monday to Saturday (excluding public holidays).

A noise survey would be done during commissioning to demonstrate compliance with predicted noise levels. Noise monitoring would then be conducted using a handheld noise monitor at predetermined locations across the site on a quarterly basis.

A noise complaints register would also be established. Should there be any noise complaints, the incident would be recorded and appropriately addressed within 24 hours.

Odour

To ensure a minimal risk of fugitive odour emissions from the facility, the proponent will be ensuring that waste delivery is to occur in enclosed vehicles, and provide an enclosed waste bunker with an airlock design for the doors to the waste receival area. It will maintain the waste receival area under negative air pressure by drawing air from this area for injection into the combustion chamber to oxidise odorous gases. During shutdown times, the auxiliary fan would extract odorous air to the shutdown stack for dispersal.

The proponent would undertake odour testing during commissioning, including testing the bunker building and reception hall for air tightness, and odour emissions from the shutdown stack.

The proponent has considered contingency actions in the event that odour levels are higher than predicted. These include installing an atomiser to suppress odour and dust inside the waste bunker during combustion system shutdowns, constructing a semi-porous wind fence along the southern boundary, upgrading the capacity of the shutdown air extraction system, and repositioning the air extraction intake vents in the bunker.

The proponent would also implement an odour complaints register and resolution procedure to address any concerns raised by the public.

Dust

The facility would have fabric filters and an atomiser system within the facility to minimise dust impacts.

To further ensure that dust is appropriately managed, the proponent would use water trucks and crusting agents, install wind fencing to reduce surface winds, restrict the size of stockpiles and manage traffic over cleared areas to control dust.

The proponent would use visual and handheld instrumentation to assess the effectiveness of the dust controls.

Summary

The EPA has paid particular attention to:

- relevant EPA principles, guidance and policy pertaining to Social Surroundings
- results from the noise and odour emissions modelling
- advice from DWER that the proposed technology is relatively quieter than the previously proposed gasification technology
- the proposed management and mitigation measures for noise, odour and dust.

The EPA considers, having regard to the relevant EP Act principles and environmental objective for Social Surroundings, that the impacts to this factor are manageable and would not be significant.

The EPA also notes that a works approval and licence is a statutory requirement under Part V of the EP Act. (See other advice in Section 6 below.)

5. Conclusion

The EPA considers the principle of waste minimisation to be a relevant consideration in this assessment, and notes that the proposal would be processing residual waste that would otherwise be disposed of in landfill.

Having assessed the proposal against the EPA's objective for the key environmental factors of Air Quality and Social Surroundings, the EPA recognises that the proposal could contribute to impacts on air quality, including odour, and noise emissions.

Application of mitigation hierarchy

Consistent with relevant policies and guidance, the proponent has addressed the mitigation hierarchy by identifying measures to avoid, minimise and rehabilitate environmental impacts including:

- choosing a site within an industrial zone
- the use of proven and best practice technology
- ensuring the WTE plant has the ability to accept residual waste only
- an air pollution control system incorporating backups for key systems to minimise fugitive emissions
- the provision of an enclosed building, including fast-acting doors to the waste receival area to reduce noise and odour emissions.

Conclusion

The EPA has taken the following into account in its assessment of the proposal as a whole, including the:

- impacts to all the key environmental factors
- EPA's confidence in the proponent's proposed mitigation measures
- relevant EP Act principles and the EPA's objectives for the key environmental factors
- EPA's view that the impacts to the key environmental factors are manageable, provided the recommended conditions are imposed.

Given the above, the EPA has concluded that the proposal is environmentally acceptable and therefore recommends that the proposal may be implemented subject to the conditions recommended in Appendix 5.

6. Other advice

Regulation under Part V of the EP Act

The EPA notes that a works approval and licence is a statutory requirement under Part V of the EP Act, and that any requirement for air emissions monitoring is best regulated through this process. The EPA recommends 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 recommends 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.

Inquiry under Section 46 of the EP Act

The EPA has considered the findings from the section 46 inquiry to investigate the types of waste feedstocks of WTE plants and ensure that they are restricted to genuine 'residual waste', in accordance with the waste hierarchy as defined in the WARR Act. In considering the findings, the EPA has provided for a condition to be applied across all WTE facilities to ensure that the facility has the ability to operate on 'residual waste' only and to monitor the waste the facilities are receiving (condition 7). The EPA notes that DWER would be responsible for assessing the management plan required by this condition and would need to review and update the management plan, as and when required, to allow for continuous improvement and changes to waste management practices.

NSW decision

The EPA has considered the decision on the Eastern Creek Energy from Waste Facility in NSW and notes that the proposal is different from the East Rockingham WTE proposal, including size and scale, proximity to sensitive receptors, and waste feedstocks accepted. The EPA considers that the East Rockingham WTE proposal can be managed to be environmentally acceptable, provided that the recommended environmental conditions are implemented.

7. Recommendations

That the Minister for Environment notes:

1. The proposal assessed is for the construction and operation of a WTE plant located 3 km north-east of Rockingham in the RIZ.
2. The key environmental factors identified by the EPA in the course of its assessment are Air Quality and Social Surroundings, as set out in Section 4.
3. The EPA has concluded that the proposal may be implemented, provided the implementation of the proposal is carried out in accordance with the recommended conditions and procedures set out in Appendix 5. Matters addressed in the conditions include the following:
    a) ensuring non-permissible waste types are restricted at the WTE facility
    b) ensuring only genuine residual wastes are processed.
4. Other advice provided by the EPA, as set out in Section 6.

References

Aurora Environmental 2017, *East Rockingham Waste to Energy Facility Environmental Review Document*, prepared for New Energy Corporation, West Perth, WA.

Aurora Environmental 2018, *East Rockingham Waste to Energy Facility response to submissions*, prepared for New Energy Corporation, West Perth, WA.

CDM Smith 2018, *Human health risk assessment proposed East Rockingham Waste to Energy Facility*, Richmond, Vic.

DWER 2017, *2016 Western Australia air monitoring report*, Department of Water and Environmental Regulation, Perth, WA.

ENVALL 2017, *Air quality impact assessment of proposed waste power station in East Rockingham, Western Australia*, Environmental Alliances Pty Ltd, Perth, WA.

EPA 2005, *Guidance statement no. 3 – Separation distances between industrial and sensitive land uses*, Environmental Protection Authority, Perth, WA.

EPA 2013, *Environmental and health performance of waste to energy technologies*, Report 1468, EPA, Perth, WA.

EPA 2018, *Statement of principles, factors and objectives*, Environmental Protection Authority, Perth, WA.

EPA 2016a, *Environmental factor guideline – Air Quality*, Environmental Protection Authority, Perth, WA.

EPA 2016b, *Environmental factor guideline – Social Surroundings*, Environmental Protection Authority, Perth, WA.

Herring Storer Acoustics 2017, *Waste to Energy power station, East Rockingham: environmental acoustic assessment*, Herring Storer Acoustics, Perth, WA.

Appendix 1: List of submitters

Organisations:

Alliance for a Clean Environment
City of Kwinana
City of Rockingham
Department of Biodiversity, Conservation and Attractions
Department of Health
Department of Water and Environmental Regulation
Economic Regulation Authority
Kwinana Industries Council
Landcorp
Waste Authority

Individuals:

Nine private submitters

Appendix 2: Consideration of principles

EP Act Principle	Consideration
1. The precautionary principle *Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In application of this precautionary principle, decisions should be guided by –* *a) careful evaluation to avoid, where practicable, serious or irreversible damage to the environment; and* *b) an assessment of the risk-weighted consequences of various options.*	In considering this principle, the EPA notes that Air Quality and Social Surroundings could be significantly impacted by the proposal. The assessment of these impacts is provided in this report. Site specific studies, including air emissions, odour and noise modelling, have been undertaken for the proposal. Predictions show that the impacts on the surrounding environment would meet relevant standards and are unlikely to have a significant impact. From its assessment of this proposal the EPA has concluded that there is no threat of serious or irreversible harm.
2. The principle of intergenerational equity *The present generation should ensure that the health, diversity and productivity of the environment is maintained and enhanced for the benefit of future generations.*	This principle is a relevant consideration for the EPA when assessing and considering the impacts of the proposal on the environmental factors of Air Quality and Social Surroundings. The EPA notes that the proponent has identified measures to avoid or minimise impacts. The EPA has considered these measures during its assessment. The project would contribute to current and future waste management outcomes, being higher in the waste hierarchy then landfill, and would not have a negative impact on health, diversity and productivity.
3. The principle of the conservation of biological diversity and ecological integrity *Conservation of biological diversity and ecological integrity should be a fundamental consideration.*	In considering this principle, the EPA notes that Air Quality and Social Surroundings could be significantly impacted by the proposal. The assessment of these impacts is provided in this report. The proposal is located in the Rockingham Industrial Zone. Site specific studies have been sourced or undertaken to determine the presence of Threatened and Priority flora, fauna and ecological communities.

EP Act Principle	Consideration
	From its assessment of this proposal, the EPA has concluded that the proposal would not compromise the biological diversity and ecological integrity of the affected areas.
4. Principles relating to improved valuation, pricing and incentive mechanisms *(1) Environmental factors should be included in the valuation of assets and services.* *(2) The polluter pays principles – those who generate pollution and waste should bear the cost of containment, avoidance and abatement.* *(3) The users of goods and services should pay prices based on the full life-cycle costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste.* *(4) Environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structure, including market mechanisms, which enable those best placed to maximise benefits and/or minimise costs to develop their own solution and responses to environmental problems.*	This principle is a relevant consideration for the EPA when assessing and considering the impacts of the proposal on the environmental factor of Air Quality. In considering this principle, the EPA notes that the proponent is consistent with the polluter pays principle, where those who generate pollution and waste should bear the cost of containment, avoidance and abatement. The EPA has had regard to this principle during the assessment of the proposal.
5. The principle of waste minimisation *All reasonable and practicable measures should be taken to minimise the generation of waste and its discharge into the environment.*	This principle is a fundamental and relevant consideration for the EPA when assessing and considering the impacts of the proposal on the environmental factors of Air Quality and Social Surroundings. The proponent recognises the demand for waste management infrastructure in Western Australia, and the proposal addresses the waste hierarchy by diverting waste that would otherwise be sent to landfill. Condition 7 requires the proponent to ensure the facility has the ability to operate on residual waste only, as well as monitoring of the waste the facility receives.

Appendix 3: Evaluation of other environmental factors

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
LAND			
Flora and Vegetation	The proposal would involve clearing approximately 10 ha of native vegetation.	**Department of Biodiversity, Conservation and Attractions** There is no change to the footprint nor the impact of the proposal on *Conservation and Land Management Act 1984* and *Wildlife Conservation Act 1950* related matters. **City of Rockingham** The vegetation surveys were undertaken in 2002, 2004 and 2005, and are considered to be outdated. A revised flora and vegetation survey should be undertaken consistent with the EPA's latest guidance.	Flora and Vegetation was previously considered in the original proposal. It was not identified as a preliminary key environmental factor when the EPA decided to assess the revised proposal. The vegetation on the site is in a relatively degraded condition. The vegetation on the site is found to belong to Beard's vegetation association Rockingham System 3048. The current extent of the vegetation association is estimated to have 25.39% of its pre-European extent remaining and 7.03% occurs within International Union for Conservation of Nature reserves. The proposal is expected to directly impact on less than 0.3% of the remaining extent. Two Threatened Ecological Communities (TECs) have been identified as *potentially* occurring in the vicinity of the site, including the FCT19b and the 'Banksia woodlands of the Swan Coastal Plain'. Neither were found to occur on the site.

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
			The Priority 3 Ecological Community (PEC) 'Acacia shrublands on taller dunes' is known from 13 locations over a range of 175 km between Seabird and Preston Beach. The community is reasonably extensive and is known to occur in excellent condition. The maximum extent likely to be cleared in good to degraded condition is 0.5 ha. This is unlikely to represent a significant impact to the PEC. The EPA considers that the impacts are not different to those considered in the original proposal. The EPA notes that the potential impacts are not likely to be significant due to the modified state of the site and limited amount of clearing required. Accordingly, the **EPA did not consider Flora and Vegetation to be a key environmental factor** at the conclusion of its assessment.
Terrestrial Fauna	The proposal has potential to impact on fauna habitat from clearing of approximately 10 ha of native vegetation.	**Department of Biodiversity, Conservation and Attractions** There is no change to the footprint nor the impact of the proposal on *Conservation and Land Management Act 1984* and *Wildlife Conservation Act 1950* related matters.	Terrestrial Fauna was previously considered in the original proposal. It was not identified as a preliminary key environmental factor when the EPA decided to assess the revised proposal.

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
		City of Rockingham The fauna surveys were undertaken in 2005 and 2008, and are considered to be outdated. The fauna survey should be updated and revised.	Three habitat types have been recorded at the proposal site and will be directly impacted. These include *Xanthorrhoea preisii*, *Acacia rostellifera* and *A. saligna* degraded shrubland, *Acacia* and *Xanthorrhoea* shrubland, and *Melaleuca* and Banksia woodland (although no Banksia are present in this fauna habitat type). The vegetation condition has been recorded as ranging between 'highly degraded' and 'disturbed'. Desktop reviews undertaken for the site found a limited potential for conservation significant fauna to utilise the site. The EPA notes that the impacts to fauna would not be different to the original proposal. Due to the degraded quality of the habitat to be impacted and the 92 ha of better quality habitat protected in the RIZ, a significant impact to terrestrial fauna is not expected. Accordingly, the **EPA did not consider Terrestrial Fauna to be a key environmental factor** at the conclusion of its assessment.

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
WATER			
Inland Waters	Potential impacts on surface water and groundwater during construction activities. There is also potential for contamination to the environment from the handling of liquid wastes, and spills of hydrocarbons and chemicals.	**Department of Water and Environmental Regulation** The ash that is produced from the incineration of waste materials has the potential to cause soil and groundwater contamination without careful management. **Public** Public raised concerns about potential impacts on the water quality at Cockburn Sound, and the handling and disposal of wastewater produced on site. There are also concerns about wastewater generated from the incinerator wet scrubbers.	No natural surface water features exist within 1 km of the site. The nearest surface water features are man-made sumps and basins associated with industrial sites about 500 m to the north. Groundwater in this area comprises an unconfined superficial aquifer, the Rockingham Sand aquifer, Leederville aquifer, and Yarragadee aquifer. The maximum groundwater level associated with the site is 1.15 m Above Height Datum. Should dewatering be required during construction, it is likely the volume of dewater generated would be limited. A 5C licence under the *Rights in Water and Irrigation Act 1914* would be obtained before construction if required. Waste would be transported within contained vehicles to enclosed buildings with impervious walls and floors. No wastewater would be discharged from the waste to energy process. Sewage generated onsite will be directed to an onsite aerobic treatment unit.

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
			Potential significant impacts on groundwater quality are considered low due to the nature of operations requiring limited, if any, groundwater; design of the facility with impervious floors/walls; and lack of discharge of wastewater from the waste to energy plant. Accordingly, the **EPA did not consider Inland Waters Environmental Quality to be a key environmental factor** at the conclusion of its assessment.
AIR			
Air Quality	The proposed plant would generate emissions and impact on air quality. An isolated residence is located 1.1 km from the site, with residential premises located 2.3 km from the site. There are also industrial premises surrounding the site.	**Department of Water and Environmental Regulation** DWER considers a stack emissions verification program should be undertaken for all point sources. **City of Kwinana** There are residential premises located approximately 1 km east of the facility, but potential impacts on these residences are not adequately addressed. **Public** The proposal would be increasing air toxins to the Kwinana air shed, and potentially Rockingham from burning noxious chemicals. Emissions would impact on residents in	The EPA considers Air Quality to be a key environmental factor at the conclusion of its assessment. This is further discussed in Section 4.1.

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
		neighbouring suburbs, and represents a major long-term air quality risk to the region.	
PEOPLE			
Social Surroundings	Construction and operation activities would generate noise and odour emissions.	**City of Kwinana** The City is concerned that part of the access routes will be affected by odour, with the potential to adversely affect the amenity of people accessing the city. The proposal location should be reconsidered and an alternative site be sought closer to the core of the Kwinana Industrial Area where the prevailing wind direction will direct any fugitive emissions over the existing industrial areas and not residential zoned land. **Department of Water and Environmental Regulation** Most equipment items proposed for this plant using grate combustion technology are relatively quieter than those of the previously proposed gasification technology. It is recommended that procedures for managing odour complaints be established and that complaints act as a trigger for an odour emissions investigation and implementation of mitigation actions. **Department of Health**	The EPA considers Social Surroundings to be a key environmental factor at the conclusion of its assessment. This is further discussed in Section 4.2.

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
		Considering the nearest residential property is located 1 km east and that other residential areas are located within 3 km of the Special Industry Zone, it may be prudent to establish a resident-based complaint system and include this as an operation condition. **Public** Submitters are concerned about noise, dust and odour. There is also concern about increased traffic.	
Human Health	Potential impacts associated with emissions from the plant, such as those from air quality and noise emissions, are assessed under the key environmental factors of Air Quality and Social Surroundings. Other potential impacts to human health from the plant, such as from radiation, are limited.	**Public** Submitters are concerned about the impacts on health from the proposal. Particular concerns are associated health risks from air emissions.	Human Health was not identified as a preliminary key environmental factor when the EPA decided to assess the proposal. EPA consideration of emissions to air are considered through impacts to the physical environment. This is dealt with under the key environmental factor Air Quality, which is discussed in Section 4.1. Accordingly, the **EPA did not consider Human Health to be a key environmental factor** at the conclusion of its assessment.

Appendix 4: Proposed changes to conditions for revised proposal

Proposed Implementation Agreement (Ministerial Statement)

The EPA recommends that the proposal may be implemented and further recommends that the implementation of the proposal be subject to the Implementation Agreement (Ministerial Statement) set out in Appendix 6.

The recommended Ministerial Statement has been developed in accordance with the *Environmental Impact Assessment (Part IV Divisions 1 and 2) procedures manual 2016* and includes a review of the following implementation conditions:

- Ministerial Statement 994: East Rockingham Waste to Energy and Materials Recovery Facility of MS 994, issued on 20 January 2015.

Proposed changes

The main changes between the proposed new Ministerial Statement (Appendix 6) and the existing Ministerial Statement relate to:

- A change in technology from gasification to the more widely proven HZI grate combustion technology and removal of the originally approved materials recovery facility.
- A condition requiring the proponent to demonstrate that the proposal has the ability to accept residual wastes only, consistent with the waste hierarchy as defined in the *Waste Avoidance and Resource Recovery Act 2007*.

Recommended environmental conditions

The EPA notes the following:

- Condition 6 of the recommended conditions requires the proponent to ensure non-permitted wastes would not be processed at this facility.
- Condition 7 of the recommended conditions requires the proponent to implement a Waste Acceptance System Plan to ensure the facility has the ability to accept only genuine residual wastes.

Recommended proposal details (Schedule 1)

The revised proposal details contained in Schedule 1 (Appendix 6) have been amended to include an updated description which reflects the EPA's contemporary approach to project descriptions described in the EPA's Procedures Manual.

Changes include the following:

- revising the operational elements in Table 2 including:
    - increasing the waste throughput from 225 000 tonnes per annum (tpa) to 300 000 tpa and up to 30 000 tpa of sewage sludge

    - increasing the thermal capacity of the plant from 72 Megawatt thermal (MWt) to 101.8 MWt
- change to waste types accepted and restricted
- removal of the materials recovery facility
- the addition of a bottom ash handling and treatment area
- updating the maps and the figures.

Appendix 5: Identified decision-making authorities and recommended environmental conditions

Identified decision-making authorities

Section 44(2) of EP Act specifies that the EPA's report must set out (if it recommends that implementation be allowed) the conditions and procedures, if any, to which implementation should be subject. This Appendix contains the EPA's recommended conditions and procedures.

Section 45(1) requires the Minister for Environment to consult with decision-making authorities (DMAs) and, if possible, agree on whether or not the proposal may be implemented, and if so, to what conditions and procedures, if any, that implementation should be subject.

The following decision-making authorities have been identified:

Decision-making authority	Legislation (and approval)
1. Department of Water and Environmental Regulation	*Environmental Protection Act 1986* Works approval and licence
2. Metro South-West Joint Development Assessment Panel	*Planning and Development Act 2005* Planning approval
3. Economic Regulation Authority	*Electricity Industry Act 2004* Licence for electricity generation works
4. City of Rockingham	*Building Act 2011* Building permit

Statement No. xxx

RECOMMENDED ENVIRONMENTAL CONDITIONS

STATEMENT THAT A REVISED PROPOSAL MAY BE IMPLEMENTED
(*Environmental Protection Act 1986*)

EAST ROCKINGHAM WASTE TO ENERGY FACILITY

Proposal: Proposal to amend the East Rockingham Waste to Energy and Materials Recovery Facility the subject of Statement No. 994 dated 20 January 2015.

Proponent: NEW ENERGY CORPORATION PTY LTD
Australian Company Number 139 310 053

Proponent Address: Suite 1, 12 Parliament Place
WEST PERTH WA 6005

Assessment Number: 2116 and 2159

Report of the Environmental Protection Authority: 1624

Previous Assessment Number: 1910

Previous Report of the Environmental Protection Authority: 1513 and 1623

Previous Statement Number: 994 and XXX

Pursuant to section 45, read with section 45B of the *Environmental Protection Act 1986,* it has been agreed that:

1. the Proposal described and documented in Table 2 of Schedule 1 may be implemented; and

2. the implementation of the Revised Proposal, being the East Rockingham Waste to Energy and Materials Recovery Facility as amended by this Proposal, is subject to the following revised implementation conditions:

1 Proposal Implementation

1-1 When implementing the Revised Proposal, the proponent shall not exceed the authorised extent of the Revised Proposal as defined in Table 2 in Schedule 1, unless amendments to the Revised Proposal and the authorised extent of the Revised Proposal have been approved under the EP Act.

2 Contact Details

2-1 The proponent shall notify the CEO of any change of its name, physical address or postal address for the serving of notices or other correspondence within twenty eight (28) days of such change. Where the proponent is a corporation or an association of persons, whether incorporated or not, the postal address is that of the principal place of business or of the principal office in the State.

3 Time Limit for Proposal Implementation

3-1 The proponent shall not commence implementation of the proposal after five (5) years from the date on this Statement, and any commencement, prior to this date, must be substantial.

3-2 Any commencement of implementation of the proposal, on or before five (5) years from the date of this Statement, must be demonstrated as substantial by providing the CEO with written evidence, on or before the expiration of five (5) years from the date of this Statement.

4 Compliance Reporting

4-1 The proponent shall prepare, and maintain a Compliance Assessment Plan which is submitted to the CEO at least six (6) months prior to the first Compliance Assessment Report required by condition 4-6, or prior to implementation of the proposal, whichever is sooner.

4-2 The Compliance Assessment Plan shall indicate:

(1) the frequency of compliance reporting;

(2) the approach and timing of compliance assessments;

(3) the retention of compliance assessments;

(4) the method of reporting of potential non-compliances and corrective actions taken;

(5) the table of contents of Compliance Assessment Reports; and

(6) public availability of Compliance Assessment Reports.

4-3 After receiving notice in writing from the CEO that the Compliance Assessment Plan satisfies the requirements of condition 4-2 the proponent shall assess compliance with conditions in accordance with the Compliance Assessment Plan required by condition 4-1.

4-4 The proponent shall retain reports of all compliance assessments described in the Compliance Assessment Plan required by condition 4-1 and shall make those reports available when requested by the CEO.

4-5 The proponent shall advise the CEO of any potential non-compliance within seven (7) days of that non-compliance being known.

4-6 The proponent shall submit to the CEO the first Compliance Assessment Report fifteen (15) months from the date of issue of this Statement addressing the twelve (12) month period from the date of issue of this Statement and then annually from the date of submission of the first Compliance Assessment Report, or as otherwise agreed in writing by the CEO.

The Compliance Assessment Report shall:

(1) be endorsed by the proponent's CEO or a person delegated to sign on the CEO's behalf;

(2) include a statement as to whether the proponent has complied with the conditions;

(3) identify all potential non-compliances and describe corrective and preventative actions taken;

(4) be made publicly available in accordance with the approved Compliance Assessment Plan; and

(5) indicate any proposed changes to the Compliance Assessment Plan required by condition 4-1.

5 Public Availability of Data

5-1 Subject to condition 5-2, within a reasonable time period approved by the CEO of the issue of this Statement and for the remainder of the life of the proposal the proponent shall make publicly available, in a manner approved by the CEO, all validated environmental data (including sampling design, sampling methodologies, empirical data and derived information products (e.g. maps)), management plans and reports relevant to the assessment of this proposal and implementation of this Statement.

5-2 If any data referred to in condition 5-1 contains particulars of:

(1) a secret formula or process; or

(2) confidential commercially sensitive information;

the proponent may submit a request for approval from the CEO to not make these data publicly available. In making such a request the proponent shall provide the CEO with an explanation and reasons why the data should not be made publicly available.

6 Waste Acceptance Monitoring and Management

6-1 The proponent shall manage the implementation of the proposal to meet the following environmental objectives:

Demonstrate that waste types not permitted for processing, detailed in Table 2 of Schedule 1, are not processed at the East Rockingham Waste to Energy Facility by implementing conditions 6-2 to 6-8.

6-2 Prior to commissioning, the proponent shall develop (or revise) and submit a Waste Acceptance Monitoring and Management Plan to meet the objective specified in condition 6-1, which includes the following:

(1) detail the proposed monitoring methodology to:

(a) identify the supplier of each waste load;

(b) record all waste loads, including the quantities, received on site;

(c) describe the types of residual waste accepted on the site, including the source separation process for those waste types;

(d) record waste types disposed offsite; and

(2) detail a procedure to summarise the results of monitoring outlined in condition 6-2(1).

6-3 Prior to commissioning, and after receiving notice in writing from the CEO that the Waste Acceptance Monitoring and Management Plan satisfies the requirements of condition 6-2, the proponent shall:

(1) implement the approved Waste Acceptance Monitoring and Management Plan; and

(2) continue to implement the approved Waste Acceptance Monitoring and Management Plan, unless and until the CEO has confirmed by notice, in writing, that implementation is no longer required.

6-4 The proponent shall demonstrate compliance with condition 6-1 by:

(1) providing the summary required by condition 6-2(2) of the monitoring results in accordance with the requirements of the Waste Acceptance Monitoring and Management Plan, every six months from the date of commissioning, until the CEO has confirmed by notice, in writing, that monitoring is no longer required.

6-5 The proponent will retain the results of monitoring required by condition 6-4 and shall make those results available when requested by the CEO.

6-6 The proponent may review and revise the Waste Acceptance Monitoring and Management Plan.

6-7 The proponent shall review and revise the Waste Acceptance Monitoring and Management Plan as and when directed by the CEO.

6-8 The proponent shall implement the latest revision of the Waste Acceptance Monitoring and Management Plan, which the CEO has confirmed by notice, in writing, satisfies the requirements of condition 6-2.

7 Residual Waste

7-1 The proponent shall manage the implementation of the proposal to meet the following environmental objective:

Ensure that the East Rockingham Waste to Energy Facility has the ability to accept residual waste only as defined in Table 3 in Schedule 1 by implementing conditions 7-2 to 7-4.

7-2 Prior to commissioning and thereafter by 31 October each year, the proponent shall develop (or revise) and submit a Waste Acceptance System Plan to apply the objective specified in condition 7-1, which includes the following:

(1) a description of the waste types that the facility could accept, if it only operated on residual waste;

(2) a description of the source separation processes, as provided by the generator of the waste, for the waste streams that are accepted at the facility;

(3) details of, and justification for, the procedures and measures that the proponent has implemented to achieve the objectives specified in condition 7-1; and

(4) a detailed description of the learnings from the previous year(s) on how the objective specified in condition 7-1 and the Waste Acceptance System Plan can be better achieved and/or improved.

7-3 Prior to commissioning, and after receiving notice in writing from the CEO that the Waste Acceptance System Plan satisfies the requirements of condition X-2, the proponent shall immediately:

(1) implement the approved Waste Acceptance System Plan; and

(2) continue to implement the approved Waste Acceptance System Plan unless and until the CEO has confirmed by notice, in writing, that implementation is no longer required.

7-4 The proponent shall demonstrate compliance with condition 7-1 by annually undertaking an independent review of the Waste Acceptance System Plan, and

reporting it to the CEO in the Annual Compliance Report required by condition 4-6.

Schedule 1

Table 1: Summary of the Proposal

Proposal Title	East Rockingham Waste to Energy Facility
Short Description	The proposal is for the construction and operation of a waste to energy facility at Lot 1, 26 Office Road, East Rockingham. The waste to energy facility includes a reception hall, waste bunker, combustion system, boiler, bottom ash handling and treatment area, and other associated infrastructure.

Table 2: Location and authorised extent of physical and operational elements

Column 1	Column 2	Column 3
Element	**Location**	**Authorised Extent**
Physical elements		
Waste to energy facility	Figure 2	Clearing of no more than 10 ha of native vegetation within the development envelope
Operational elements		
Thermal capacity		No more than 101.8 MW thermal
Waste receival volume		Up to 300 000 tpa and 30 000 tpa of sewage waste
Emissions outputs		Shall not exceed the emissions limits specified in Annex VI of the European Union Industrial Emissions Directive (2010/75/EC) or its updates
Waste types permitted to be processed		• Bio-sludge/biosolids • Construction and demolition waste • Commercial and industrial waste • Municipal solid waste • 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 that 1% • Highly corrosive or toxic liquids or gases such as strong acids or chlorine or fluorine • Explosive materials

Table 3: Abbreviations and Definitions

Acronym or Abbreviation	Definition or Term
ANZECC	Australian and New Zealand Environment and Conservation Council
CEO	The chief executive officer of the department of the public service of the State responsible for the administration of section 48 of the *Environmental Protection Act 1986*, or his delegate.
ha	Hectare
MW	Megawatt
Residual waste	Waste that remains after the application of a best practice source separation process and recycling systems, consistent with the waste hierarchy as described in section 5 of the *Waste Avoidance and Resource Recovery Act 2007* (WARR Act), and the Waste Strategy approved or revised from time to time under the WARR Act.
tpa	Tonnes per annum

Figures (attached)

Figure 1 East Rockingham Waste to Energy Facility development envelope (this map is a representation of the co-ordinates shown in Schedule 2)

Figure 1: East Rockingham Waste to Energy Facility development envelope

Schedule 2

Coordinates defining the development envelope are held by the Department of Water and Environmental Regulation, document reference number 2018-1530086426460.