-12ENVIRONMENTAL SCOPING DOCUMENT

Proposal name:	East Rockingham Waste to Energy Project – Revised Proposal
Proponent:	New Energy Corporation Pty Ltd
Assessment number:	2116
Location:	26 Office Road, East Rockingham (Lot 1 on Diagram 62220)
Local Government Area:	City of Rockingham
Public review period:	Environmental Review Document – 4 weeks

1. INTRODUCTION

The Environmental Protection Authority (EPA) has determined that the above proposal is to be assessed under Part IV of the Environmental Protection Act 1986 (EP Act).

The purpose of the Environmental Scoping Document is to define the form, content, timing and procedure of the environmental review, required by s. 40(3) of the EP Act. New Energy Corporation Pty Ltd (the proponent) has prepared this draft ESD according to the procedures in the EPA's Procedures Manual.

Form

The EPA requires that the form of the report on the environmental review required under s. 40 (Environmental Review Document, ERD) is according to the Environmental Review Document template.

Content

The EPA requires that the environmental review includes the content outlined in sections 2 to 6.

Timing

Table 1 sets out the timeline for the assessment of the proposal agreed between the EPA and the proponent.

TABLE 1: ASSESSMENT TIMELINE

Key assessment milestones	Completion Date
EPA approves Environmental Scoping Document (5 weeks from receipt of ESD)	20 July 2017
Proponent submits first draft Environmental Review Document	Allow 1 week 27 July 2017
EPA provides comment on first draft Environmental Review Document (6 weeks from receipt of ERD)	7 September 2017
Proponent submits revised draft Environmental Review Document	21 September 2017
EPA authorises release of Environmental Review Document for public review (4 weeks if revision required by EPA) (2 weeks from EPA approval of ERD)	19 October2017 2 November 2017

Key assessment milestones	Completion Date
Proponent releases Environmental Review Document for public review for 4 weeks	9 November 2017
Close of public review period	7 December 2017
EPA provides Summary of Submissions (3 weeks from close of public review period – Allow for 1 week delay due to Christmas))	4 January 2018
Proponent provides Response to Submissions	18 January 2018
EPA reviews the Response to Submissions (4 weeks from receipt of Response to Submissions)	15 February 2018
EPA prepares draft assessment report and completes assessment (7 weeks from EPA accepting Response to Submissions)	5 April 2018
EPA finalises assessment report (including two weeks consultation on draft conditions) and gives report to Minister (6 weeks from completion of assessment)	17 May 2018

Procedure

The EPA requires the proponent to undertake the environmental review according to the procedures in the Administrative Procedures and the Procedures Manual.

2. THE PROPOSAL

The subject of this ESD is the proposal by New Energy Corporation Pty Ltd to revise the approved East Rockingham Waste to Energy Facility project to allow for consideration and use of the most appropriate energy conversion technology. Since approval of the original proposal by the Minister for Environment, changes in waste management practice and the need to provide a commercially proven technology to the market has led to New Energy to deciding to change from the Entech Gasification system to the proven grate combustion system provided by Hitachi Zosen Inova (HZI). This change is essential to achieve a commercially implementable project while achieving an identical or better environmental performance.

The regional location of the proposal is shown in Figure 1 and the development envelope and indicative footprint of the proposal is delineated in Figure 2. Photographs of the site location are shown in Figure 3.

The key characteristics of the proposal are set out in Tables 2 and 3. The key proposal characteristics may change as a result of the findings of studies and investigations conducted and the application of the mitigation hierarchy by the proponent.

TABLE 2: SUMMARY OF THE PROPOSAL

Proposal title	East Rockingham Waste to Energy and Material Recovery Facility – Revised Proposal
Proponent name	New Energy Corporation Pty Ltd
Short description	The proposal is to construct and operate a waste to energy facility with a thermal capacity of 101.8MW, utilising up to 300,000 tonnes per annum of combustible waste from commercial, industrial, construction, demolition and municipal solid waste streams. Generation capacity will be 30.8MW (with an estimated 27.7MW fed into the South West Interconnected System).

	NEC proposes to utilise the grate combustion technologies of the Hitachi Zosen INOVA (HZI) system instead of the Entech gasification system which was assessed by the EPA (No. 1513) and approved by the Minister for Environment (Statement 994). The proposed HZI technology has a proven and demonstrable track record for achieving emissions targets and was highlighted in EPA Section 16 Advice as 'state of the art' technology.

TABLE 3: LOCATION AND PROPOSED EXTENT OF PHYSICAL AND OPERATIONAL ELEMENTS

Element	Location	Proposed extent
Physical elements		
Native Vegetation Clearing	Lot 1 Office Road, East Rockingham	10 ha
Operational elements		
Thermal Capacity	Lot 1 Office Road, East Rockingham	101.8 MW
Generation Capacity		30.8 MW with an estimated 27.7 MW fed into the South West Interconnected Service (SWIS)
Input Power		3.7 MW Parasitic Load
Input Water		Approximately 100,000 kL/annum from scheme water
Input Waste Throughput		300,000 tpa nominal to be received on-site
Feedstock Waste		300,000 tpa of MSW, residuals from processed C&I, C&D waste. Residuals from Mechanical Biological Treatment Material Recycling Facilities. Biosolids and other organic sludges.
Off-site, recycling or reuse		Approximately 60,000 tpa (including recycled bottom ash metals using proven HZI processes).
Process Wastes		
Bottom Ash	Lot 1 Office Road, East Rockingham	The quantity of bottom ash produced is estimated at 20% of waste input to facility. Bottom ash will be conditioned for reuse as aggregate and road base. HZI currently do this at operating European facilities.
Scrubbing System Residues		Estimated as 4.2% of waste input. Wastes to be collected and disposed to landfill.
Wastewater		The facility will produce the following wastewater quantities. An estimated: 2.5 kL/day of wash down water. 10kL/day of water from the Water Treatment Plant. Boiler feed water circuit blow down will be recycled. All waste water requiring disposal will directed for off-site disposal at licensed facilities. Further detail will be provided through the Works Approval process.
Sewerage/ Grey Water		Disposal to an on-site effluent disposal system approved by the City of Rockingham
Emissions		The key emissions will be air emissions from the stack. Off-gases from the incineration system are discharged to atmosphere after treatment in a gas cleaning system consisting of a dry reagent scrubbing system with absorbent injection system followed by a compartmentalised pulse jet fabric filter

Element	Location	Proposed extent
		baghouse filtration (FFB). NOx emissions are controlled using a HZI's own Selective Non-catalytic Reduction (SNRC) technology. The scrubbing system and combustion control will result in emission levels that will be fully compliant with the requirements of the IED (Industrial Emissions Directive), the successor of the WID (Waste Incineration Directive). The ambient concentrations due to these emissions will be modelled to demonstrate that the air emissions from the revised proposal comply with relevant standards, are similar to those presented in the PER and will not contribute to a detrimental effect on the environmental in the Kwinana air shed. Modelling will utilise a DER approved meteorological data set and modelling techniques endorsed by DER.

3. PRELIMINARY KEY ENVIRONMENTAL FACTORS AND REQUIRED WORK

The preliminary key environmental factors identified by the EPA for the environmental review are:

1. Air quality
2. Social surroundings

Table 4 outlines the work required for each preliminary key environmental factor and contains the following elements for each factor:

- EPA factor and EPA objective for that factor.
- Relevant activities – the proposal activities that may have a significant impact on that factor.
- Potential impacts and risks to that factor.
- Required work for that factor.

Relevant policy and guidance – EPA (and other) guidance and policy relevant to the assessment.

TABLE 4: PRELIMINARY KEY TO ENVIRONMENTAL FACTORS AND REQUIRED WORK

EPA Factor 1	Air quality (emissions)
EPA objective	To maintain air quality and minimise emissions so that environmental values are protected.
Relevant activities	Dust emissions will be generated during the construction period. The waste to energy facility will have two emission points during operations: Fugitive odour emissions released from the waste receival/storage bay Gaseous emissions from the main stack. Whilst not expected under normal conditions, during an internal fire within the facility, gas emissions will be generated. Although computer modelling has not yet been completed, it is clear, based on the work completed for the previous proposal submitted by New Energy that a modern Waste to Energy facility meeting the Waste Incineration Directive emission criteria will be capable of delivering an air quality outcome that does not result in adverse environmental or health impacts. The proposed plant has almost identical specifications to those of an HZI plant commissioned in the UK in 2016, which is meeting all the European Standards and incorporates all best available technology for emissions control.
Potential impacts and risks	Potential impacts include: Dust emissions during the construction period. The waste to energy plant is accepting a range of wastes including plastics. This process has the

	potential to liberate a range of airborne contaminants in the exhaust gas stream including heavy metals, dioxins, other toxic organic compounds and acid gases including SOX, NOX, HCl and HF. The plant will handle putrescible material and therefore may result in odorous emissions. Generation of Greenhouse gas emissions.
Required work	The content of the PER will: 1. Characterise the environment relating to the factor (e.g. identify values, types of surveys, baseline data collected); 2. Describe elements of the proposal which affect the environment (e.g. temporary construction verses operation, impacts/pressures, from the proposal); 3. Predict inherent and residual impacts before and after applying the mitigation hierarchy (i.e. considering points 1 and 2); 4. Describe proposed monitoring and managements to achieve predicted outcomes/objectives; and 5. Identify offsets if appropriate, if a significant residual impact may remain after applying the mitigation hierarchy. More specifically the work will include: 6. Identify all atmospheric emissions from all potential points of discharge from the proposal. 7. Establish and predict the background pollutant levels to be used in cumulative modelling for particulates (PM_{10} and PM2.5), oxides of nitrogen and sulphur dioxide, carbon monoxide, acid gases, volatile organic compounds, metals, zinc oxide, dioxins and furans at residential areas and neighbouring industrial premises, including the impacts of existing and known proposed facilities. Where reliance is placed on historical data, modelling should contain a high degree of conservatism and inter-annual variation of historical data should be taken into account. 8. Detail the expected emissions of particulates (PM_{10} and $PM_{2.5}$), oxides of nitrogen and sulphur dioxide, carbon monoxide, acid gases, organic compounds, metals, zinc oxide (nanoparticles), dioxins and furans under normal operation, worst case conditions and during commissioning. Describe how the expected emissions were predicted. 9. Model the ground level concentration of particulates, (PM_{10} and $PM_{2.5}$), oxides of nitrogen and sulphur dioxide, carbon monoxide, acid gases, organic compounds, metals, zinc oxide (nanoparticles), dioxins and furans from the proposal in isolation and cumulatively using the background pollutant levels established in work item 7 at residential and neighbouring premises, taking into account any potential local industrial point sources, under normal operation, worst case conditions and during commissioning, as necessary. 10. Compare predicted emissions and ground level concentrations with appropriate standards. 11. Describe how the chosen technology meets best practice, and detail its track record of reliable operation (at a similar scale) to demonstrate how it meets the EPA's expectations documented in the environmental and health performance of waste to energy technologies. 12. Calculate greenhouse emissions (types and volumes).
Relevant policy and guidance	EPA Policy and guidance: Statement of Environmental Principles, Factors and Objectives. Factor Guideline – Air Quality Environmental and health performance of waste to energy technologies (EPA Report 1468) Section 16 Advice, April 2013 Other policies and guidance: Odour Methodology Guideline, Department of Environmental Protection, Perth, WA March 2002 Air Quality Modelling Guidance Notes, Department of Environment March 2006
EPA Factor 2	**Social surroundings (noise, odour and dust)**

EPA objective	To protect social surroundings from significant harm.
Relevant activities	Noise associated with the waste to energy facility may be generated during construction and operation phases. Noise will be generated from the plant and equipment at the waste to energy facility which may impact on the nearest noise sensitive premises (i.e. residences) to the project site, given that the facility will operate for 24 hours a day, seven days a week.
Potential impacts and risks	There are numerous adjacent industrial, light industrial and commercial premises within 1km, which could potentially be impacted by noise. The nearest residential area is more than 2.5km from the site. An isolated dwelling exists approximately 1.1 km to the east of the proposed facility Cumulative impacts arising from the plant in conjunction with other noise emitters has previously been shown not to significantly impact sensitive receptors. Modelled noise emissions for the approved project indicated that the facility would not impact the nearest sensitive receptor. Noise for the revised proposal is expected to be similar to the approved proposal. The provision of appropriate zoning and reservation in and around the Rockingham Industrial Zone will mitigate risks associated with urban encroachment.
Required work	13. Numerical modelling of noise emissions (including consideration of existing background noise) to demonstrate compliance with the Environmental Protection (Noise) Regulations 1997. 14. Investigate the impact of odour on residential premises and neighbouring premises using numerical modelling of odour emissions and other relevant techniques. 15. Assessment of dust control measures to prevent unacceptable particulate impacts.
Relevant policy and guidance	EPA Policy and guidance: Statement of Environmental Principles, Factors and Objectives. Factor Guideline – Social surroundings Environmental **PROTECTION (NOISE) REGULATIONS 1997.**

4. OTHER ENVIRONMENTAL FACTORS OR MATTERS

The EPA has identified the following other environmental factors or matters relevant to the proposal that must be addressed during the environmental review and discussed in the Environmental Review Document. We note that these factors have already been considered for the original approved proposal and the impacts will not materially differ in the revised proposal:

1. Flora and vegetation – Impacts on native vegetation and flora through clearing of the 10ha site.
2. Terrestrial fauna – Impacts on native fauna through clearing and development of the 10ha site.
3. Hydrological processes – Potential changes to hydrological regimes through alteration to recharge and groundwater.
4. Inland waters environmental quality – Potential impacts to groundwater quality through stormwater management and other discharges.
5. Waste management – Disposal of generated waste products.

These factors will be discussed in the ER in order to highlight that there is no change from the approved proposal.

5. STAKEHOLDER CONSULTATION

The proponent must consult with stakeholders who are affected by, or are interested in the proposal. This includes the decision-making authorities (see section 6), other relevant state (and Commonwealth) government agencies and local government authorities, the local community and environmental non-government organisations.

Specific stakeholders to be consulted include:

- City of Rockingham; and
- Department of Environment Regulation.

The local community will be consulted through a public open day during exhibition of the ERD for stakeholder input.

The proponent must document the following in the Environment Review Document:

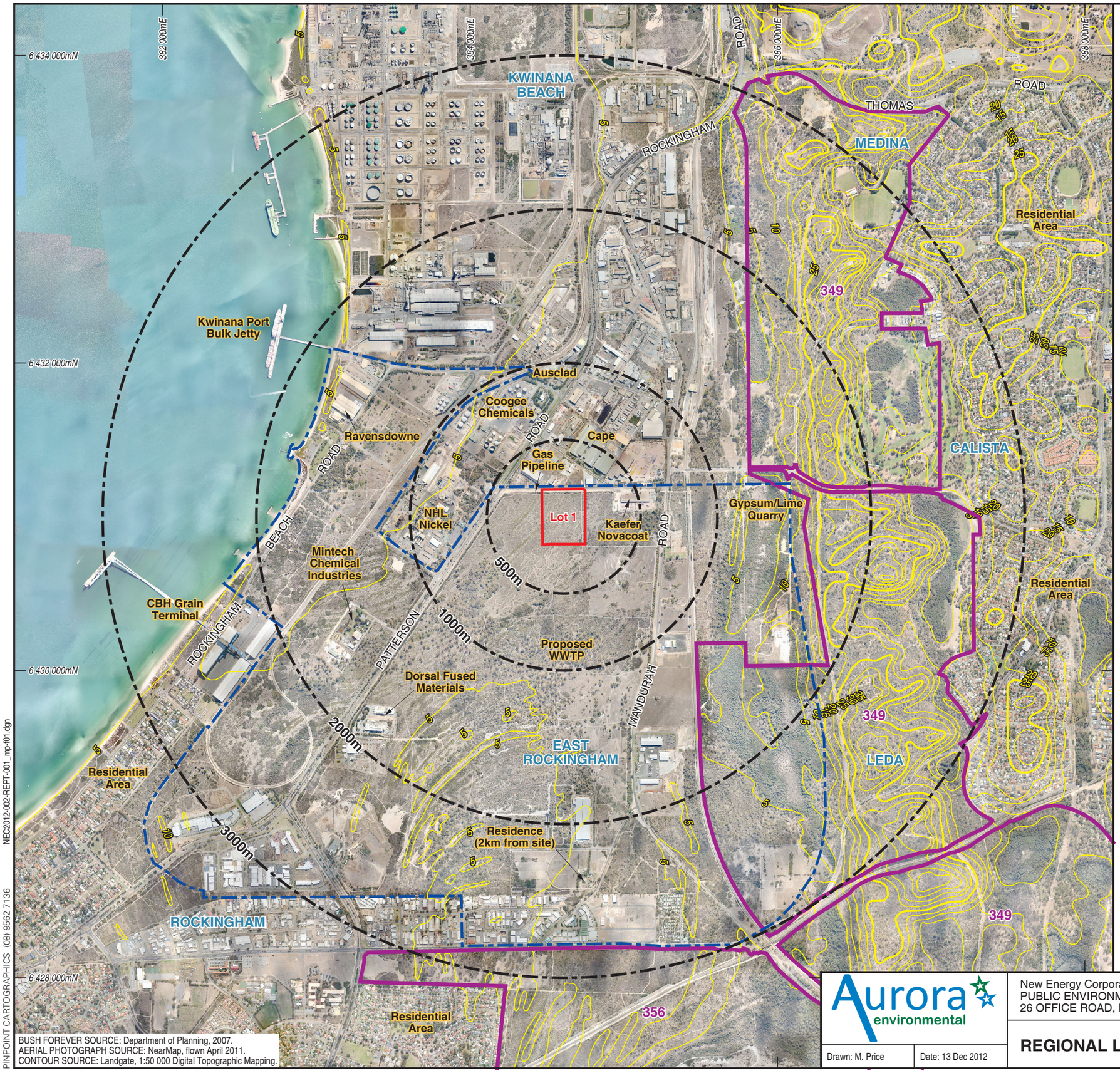
- identified stakeholders
- the stakeholder consultation undertaken and the outcomes, including decision-making authorities' specific regulatory approvals and any adjustments to the proposal as a result of consultation
- any future plans for consultation.

6. DECISION-MAKING AUTHORITIES

At this stage, the EPA has identified the following decision-making authorities (DMAs) for the proposal. Additional DMAs may be identified during the assessment.

TABLE 5: DECISION-MAKING AUTHORITIES

Decision-making authority	Relevant legislation
City of Rockingham	Planning and Development Act 2005
Department of Environment Regulation	Part V of the Environmental Protection Act 1986
Economic Regulation Authority	Economic Regulation Authority Act 2003



N

0 250 500 750 1000m

SCALE 1 : 25 000 at A3 (MGA)

Legend

- Site Boundary
- Rockingham Industrial Zone Boundary
- Topographic Contour (m AHD)
- Bush Forever Site Boundary
- 349 Bush Forever Site Number

NEC2012-002-REPT-001_mp-l01.dgn

PINPOINT CARTOGRAPHICS (08) 9562 7136

Aurora environmental

New Energy Corporation
PUBLIC ENVIRONMENTAL REVIEW - NEC WASTE TO ENERGY
26 OFFICE ROAD, EAST ROCKINGHAM

Figure 1

REGIONAL LOCATION & SURROUNDING LANDUSE

Drawn: M. Price | Date: 13 Dec 2012 | Job: NEC2012-002

N

0 50 100 150 200m

SCALE 1 : 5 000 at A3 (MGA)

Legend

- Site Boundary
- Rockingham Industrial Zone Boundary
- Cadastral Boundary
- Easement Boundary

CADASTRAL SOURCE: Landgate, April 2011.
AERIAL PHOTOGRAPH SOURCE: NearMap, flown April 2011.
PLANT SOURCE: Rowcon Pty Ltd, Dwg No. NE-KGP, 25-03-11.

Aurora environmental

Drawn: M. Price | Date: 14 Dec 2012

New Energy Corporation
PUBLIC ENVIRONMENTAL REVIEW - NEC WASTE TO ENERGY
26 OFFICE ROAD, EAST ROCKINGHAM

AERIAL PHOTOGRAPH

Figure 3

Job: NEC2012-002

PINPOINT CARTOGRAPHICS (08) 9562 7136 NEC2012-002-REPT-001_mp-f03.dgn

Plate 1
Photograph of 26 (Lot 1) Office Road, East Rockingham

Plate 2
Photograph of Lot 1 Office Road, East Rockingham

Plate 3
26 (Lot 1) Office Road, East Rockingham

Plate 4
26 (Lot 1) Office Road, East Rockingham

Plate 5
26 (Lot 1) Office Road, East Rockingham

Plate 6
Office Road frontage looking west

Plate 7
Office Road frontage, looking east

1 Office Road, East Rockingham	
NEC2017-004	