

SOUTH WEST GROUP

A Co-operative venture of the municipalities of:
Cockburn, East Fremantle, Fremantle, Kwinana, Melville & Rockingham

Monday, 21 July 2014

Enquiries: Mick McCarthy – (08) 9364 0631
Our Reference: South West Group Submission
Phoenix Energy PER

Mr Paul Vogel
Chairman
Environmental Protection Authority
Locked Bag 10
EAST PERTH WA 6892

Dear Paul

**SOUTH WEST GROUP SUBMISSION IN RESPONSE TO THE PHOENIX ENERGY
KWINANA WASTE TO ENERGY PROJECT PUBLIC ENVIRONMENTAL REVIEW
(ASSESSMENT NO. 1945)**

The purpose of this correspondence is to respond to the Phoenix Energy Kwinana Waste to Energy Project Public Environmental Review (PER).

Background

The South West Group, formed in November 1983, is a Voluntary Regional Organisation of Councils (VROC). It comprises the Cities of Cockburn, Fremantle, Kwinana, Melville, and Rockingham and the Town of East Fremantle.

The South West Group is managed by a Board consisting of the Mayors and CEOs of its member local governments.

The South West Group seeks to work with these six local governments and through cooperation with industry, community and the other spheres of government to capture a wide range of opportunities to enhance economic growth as well as supporting a diversity of quality lifestyles whilst servicing and sustaining cohesive, productive communities in an enviable environmental setting.

The Phoenix Energy proposal has implications for waste management in the South West Metropolitan Region, with the City of Kwinana committed to a waste supply agreement with the company in early 2014.

The South West Group member Councils are involved in a range of waste management and recycling activities throughout the region on behalf of their communities including:

- waste recyclables kerbside collection
- verge collection (green waste and bulky items such as white goods)
- recycling drop offs of selected wastes (e.g. batteries, e-waste)
- resource recovery and materials recovery facility (MRF) processing through the Southern Metropolitan Regional Council's (SMRC) Regional Resource Recovery Centre (RRC)

- landfill disposal (Rockingham and Kwinana)

The South West Group's response to a regional facility proposals, such as that described in the PER, focusses on regional scale issues of potential significance and recognizes that the member Councils are best placed to respond to local issues of significance.

The Proposal

The Phoenix Energy Kwinana Waste to Energy (WtE) Project proposal is located on Lot 14 Leath Road Kwinana Beach in the Kwinana Industrial Area (KIA), which is the State's premier heavy industry area.

The Environmental Scoping Document (ESD) prepared by the Environmental Protection Authority (EPA) specifies the scope and content of the PER.

The proposal aims to comply with the 21 principles contained in the EPA Report "Environmental and Health Performance of Waste to Energy Technologies (Report 1468, April 2013) as well as meet the relevant statutory and best practice emissions standards and guidelines.

The proposal involves a mass combustion waste to energy system capable of accepting 400,000 tonnes per annum of municipal solid waste (MSW), with the initial stage proposing 300,000 tonne per annum capacity, using Martin-Mitsubishi grate (stoker) furnaces or lines.

There are about 407 operating and approved reference sites of this combustion technology operating worldwide, with 153 of these facilities processing over 200,000 tonnes per annum throughout Europe, the USA and Japan under stringent local emissions regulations.

The waste receival area for the Kwinana WtE proposal is capable of holding nine days supply of MSW in a fully enclosed, cement lined storage bunker operated under slight negative pressure to minimize odour and dust emissions.

The proposal is expected to generate 36 MW of energy generation used to operate the facility, with excess energy fed into the State Government's electricity grid.

Residual wastes in the form of fly ash and bottom ash are proposed to be processed into bricks/pavers in an on-site facility or sold as aggregate for road and building products.

Air emissions from the multi-stack facility are proposed to employ air protection controls to ensure emissions achieve National Environmental Protection Measure (NEPM) or other relevant standards and the continuous emissions monitoring system (CEMS) will be employed to track the facility's air emissions performance.

Environmental and Health Performance of Waste to Energy Technologies (EPA Report 1468, April 2013)

The EPA's advice to the Minister in Report 1468 is based on six key principles:

- Only proven technology components should be accepted for commercially operating waste to energy plants.
- The expected waste input should be the main consideration for the technology and processes selected.

- Proposals must demonstrate best practice that, at a minimum, meets the European Union's Waste Incineration Directive standards for emissions at all times.
- The waste sourced as input must target genuine residual waste that cannot feasibly be reused or recycled.
- Continuous emissions monitoring must occur where feasible, and non-continuous emissions monitoring must be required for all other emissions of concern.
- Residual by-products must be properly treated and disposed of to an appropriate landfill, except where it is demonstrated that they can be safely used elsewhere with acceptable impacts to the environment or human health

In Table 3 of the PER, Phoenix Energy provides responses aimed at demonstrating the Kwinana WtE proposal's compliance with the 21 recommendations contained in the EPA Report.

The ability of the facility to address the waste hierarchy by not relying solely on a single waste stream and not undermining future waste recovery and recycling options in the future are important considerations reflected in the EPA's recommendations.

Phoenix Energy's responses to the EPA's 21 recommendations are considered adequate and reasonable, based on the rationale and information provided.

Environmental Factors

The ESD identified a number of environmental factors to be addressed in the PER, which are listed and discussed in more detail below:

- Storage and Handling Facilities
 - Terrestrial environmental quality and inland waters environmental quality
 - Amenity - odour
- Combustion Facilities
 - Air quality
- Both Facilities
 - Amenity - noise
- Other Environmental Matters
 - Native vegetation clearing

Storage and Handling Facilities: Terrestrial Environmental Quality and Inland Waters Environmental Quality

This factor covers the storage, re-use and disposal of waste, storm water and wastewater disposal.

The proposal plans for nine days MSW capacity based on 90 trucks over a two hour shift, or 45 trucks per hour. The enclosed trucks, buildings with impervious floors for waste handling and storage areas, cement lined walls and sump collection points will minimize waste related environmental impacts on land and water. Storm water runoff is proposed to be stored in underground tanks on site for re-use as process water, with excess run off to be directed to an infiltration basin. Wastewater from sewage and grey water is planned to be managed onsite using nutrient retentive aerobic treatment units. Residual waste in the form of fly ash and bottom ash will be processed into bricks/pavers or sold as aggregate.

Phoenix Energy has rated the significance of the impacts associated with this factor as "Low", which is reasonable based on the information provided.

Storage and Handling Facilities: Amenity – Odour

All waste movements on site will be in covered vehicles and waste will be stored in a fully enclosed building, maintained under negative air pressure. Extracted air is directed to the combustion furnaces and then subjected to the Air Pollution Control (APC) system. The building will employ fast acting roller doors, for vehicles entering and exiting the tipping area, and a range of waste management and handling procedures aimed at further reducing odour emissions.

Phoenix Energy has rated the significance of the impacts associated with this factor as “Insignificant”.

This rating may be considered somewhat optimistic and a “Low” rating may be more appropriate, however based on the supporting information provided by the proponent, it is considered that adequate measures are in place to ensure that odour is likely to remain well within acceptable levels.

Combustion Facilities: Air Quality

There is a range of air contaminants of concern from flue gases associated with the combustion of MSW including:

- Heavy metals
- Particulate matter
- Dioxins, furans and other toxic organic compounds
- Acid gases (including sulphur dioxide, oxides of nitrogen, hydrogen chloride and hydrogen fluoride)

Contaminants such as sulphur dioxide and particulates have ambient standards criteria under the Environmental Protection (Kwinana) (Atmospheric Wastes) Policy 1999 and associated Regulations 1992 for areas in and around the KIA identified as Area A (within the heavy industry zone), Area B (outside Area A and zoned for industrial purposes – most of which coincides with the industrial buffer) and Area C (rural and residential land outside Area A and B).

For other pollutants, ground level concentration (GLC) limits are established under the National Environmental Protection Measure (NEPM) – Air Quality Standards and Goals as well as various other standards and guidelines including the European Directives 2000/76/EC on the incineration of waste (WID) recast as Directive 2010/75/EU on industrial emissions (integrated pollution prevention and control).

The stack emissions from the proposed multi-stack flues were subject to detailed preliminary air quality and odour assessment by ENVIRON Australia Pty Ltd. A preliminary Public Health and Risk Assessment was also undertaken.

The air dispersion modelling for the WtE project proposal, in conjunction with the preliminary Public Health and Risk Assessment, concluded the following:

- No exceedences of odour guidelines are predicted to occur in residential and neighbouring premises
- The proposal would represent 3.5% SO₂ based Kwinana EPP guidelines based on maximum 1 hour average for Areas A, B and C, with 4.3% for maximum 24 hour average and 1.6% for annual maximum average.

- Minor increase in 1 hour average NO₂ GLCs of 3.8% at Hillman Child Care Centre, 3.5% at Hope Valley Primary School and 3.4% at Callista Primary School
- Cumulative impact on GLCs of heavy metals less than 1%.
- Levels of NO_x not expected to contribute to ozone concentrations
- Not expected to result in increased emissions of dioxin or furans taking into account existing sources
- Particulates PM₁₀ and PM_{2.5} would increase 0.9% in the Kwinana region from proposed WtE plant
- All carcinogens are expected to be well below the US EPA recommended risk being so small as to be considered negligible (i.e. less than 1 in 1 million risk of developing cancer from lifetime exposure to atmospheric compounds)
- Negligible impact on human health or the environment from a well-designed WtE facility.

Comparison of the air shed with and without the WtE project concluded that emissions from the proposed Kwinana WtE facility are not expected to significantly increase the maximum predicted GLCs of SO₂ within the Kwinana area and will not result in any change to compliance with the Standards and Limits of the Kwinana EPP:

The continuous emissions monitoring system (CEMS) has an “approach to limit” alarm facility that provides pre-warning when emission limits have the potential to be reached. As the two lines can be run in parallel or independent of each other, there is the ability to shut down one or both lines in the event that emissions limits are breached. Phoenix Energy will make monitoring data publically available.

The conclusions above are derived using highly conservative modelling assumptions and are supported by management procedures and mitigation measures related to proven technology, the APC system, continuous emissions monitoring system (CEMS) and proposed contingencies.

Based on this, the proponents have rated the impact for air emissions as “Negligible” on the environmental and public health and “Insignificant” for odour emissions.

Both Facilities: Amenity – Noise

The site is situated in the heart of the KIA, with the nearest sensitive receptor (Naval Base Hotel) being approximately two kilometres from the site. A detailed acoustic assessment, including the establishment of acoustic design criteria, has been undertaken by Herring Storer Acoustics.

Noise emissions are dominated by truck movements, particularly to the east of the site. As a result, it is proposed to establish a 2.4 metre high acoustic barrier wall on the eastern boundary to ensure that the facility remains fully compliant with assigned noise limits.

The noise modelling has concluded that the proposal is not expected to contribute significantly to existing cumulative noise levels and will satisfy *Environmental Protection Noise Regulations 1997*.

Other Environmental Matters: Native Vegetation Clearing

There is approximately 0.6 hectares of native vegetation on the north east corner of the site that will require clearing as a result of the project.

The EPA objectives for vegetation on the site relate to maintaining representation, diversity, viability and ecological function at species population and community levels.

Although the proposal is unlikely to adversely impact on EPA objectives, there are local natural area impacts that require consideration. The PER does not contain sufficient information to assess the impact on the loss of remnant vegetation, so it is difficult to determine local and possibly wider impacts.

In proposals of this scale, it is usual for at least a flora survey to be undertaken to determine species present and if there are any declared rare flora (DRF) or rare fauna likely to be affected. The wider location, and possibly the site, is known habitat for the Southern Brown Bandicoot, which is a rare fauna species protected under State legislation.

In addition, it is common practice for proponents to offset loss of vegetation or habitat through the replanting of other areas nearby to ensure that there was no net loss of biodiversity values. Pro-active initiatives associated with local area habitat rehabilitation could be viewed as a legitimate corporate social responsibility activity that is likely to be supported by the Community Advisory Group established by Phoenix Energy.

Although not a statutory requirement to gain a permit for clearing native vegetation less than one hectare in area, the proponent could give consideration to providing offset planting at a site nearby within the KIA buffer. The buffer contains vegetation and habitat of high conservation value and would benefit from any biodiversity offsets in the form of replanting or revegetation in degraded areas.

The City of Kwinana has recently undertaken replanting and landscaping work in the KIA area to improve the amenity of the area and the biodiversity work linked to the Kwinana WtE proposal could complement this program.

Based on the above, it is recommended that the proponent conduct a flora survey of the site and prepare a species list. Consideration should also be given to providing biodiversity offsets in the KIA buffer or providing funding to landscaping initiatives to compensate for vegetation loss as a result of the proposal.

Regional Context of the Proposal

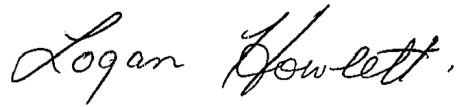
The Kwinana WtE proposal has the potential to make a significant contribution toward the future waste management needs of the member Councils in the South West Metropolitan Region.

Combined with other facilities currently operating in the region (including the SMRC Regional Resource Recovery Centre and member Council landfill operations) and proposed for the region (including the New Energy proposal), there is the potential in the near future to achieve a closed loop waste management solution for the South West Metropolitan Region that meets waste hierarchy requirements and community recycling expectations.

Waste to energy has an important role to play in managing parts of the waste stream that cannot be adequately dealt with through other options available in the waste hierarchy. This approach recognizes that waste to energy technology is a final process option for waste management and is therefore likely to treat a smaller and comparatively diminishing component of the waste stream that is not able to be effectively captured by more sustainable waste management options (prevent, reduce, re-use and recycle).

If you have any queries regarding this submission, please contact the Director South West Group, Mick McCarthy on (08) 9364 0631, mob 0478 325 469 or email director@southwestgroup.com.au.

Yours sincerely

A handwritten signature in black ink that reads "Logan Howlett". The signature is written in a cursive style with a large initial 'L' and a trailing flourish.

Mayor Logan Howlett JP
Chair South West Group