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Published on 12 July 2007

Statement No. 744

**STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED  
(PURSUANT TO THE PROVISIONS OF THE  
ENVIRONMENTAL PROTECTION ACT 1986)**

**KWINANA ETHANOL BIO-REFINERY  
KWINANA INDUSTRIAL AREA**

**Proposal:** The construction and operation of an ethanol bio-refinery on a 19-hectare site in the Kwinana Industrial Area. The proposal is documented in schedule 1 of this statement.

**Proponent:** Primary Energy Pty Limited

**Proponent Address:** PO Box 1734, TAMWORTH NSW 2340

**Assessment Number:** 1668

**Report of the Environmental Protection Authority:** Bulletin 1248

The proposal referred to in the above report of the Environmental Protection Authority may be implemented. The implementation of that proposal is subject to the following conditions and procedures:

**1 Proposal Implementation**

1-1 The proponent shall implement the proposal as documented and described in schedule 1 of this statement subject to the conditions and procedures of this statement.

**2 Proponent Nomination and Contact Details**

2-1 The proponent for the time being nominated by the Minister for the Environment under sections 38(6) or 38(7) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal.

- 2-2 The proponent shall notify the Chief Executive Officer of the Department of Environment and Conservation (CEO) of any change of the name and address of the proponent for the serving of a notice or other correspondence within 30 days of such change.

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### **3 Time Limit of Authorisation**

- 3-1 The authorisation to implement the proposal provided for in this statement shall lapse and be void within five years after the date of this statement if the proposal to which this statement relates is not substantially commenced.
- 3-2 The proponent shall provide the CEO with written evidence which demonstrates that the proposal has substantially commenced on or before the expiration of five years from the date of this statement.

### **4 Compliance Reporting**

- 4-1 The proponent shall submit to the CEO environmental compliance reports annually reporting on the previous twelve-month period, unless required by the CEO to report more frequently.
- 4-2 The environmental compliance reports shall address each element of an audit program approved by the CEO and shall be prepared and submitted in a format acceptable to the CEO.
- 4-3 The environmental compliance reports shall:
1. be endorsed by signature of the proponent's Chief Executive Officer or a person, approved in writing by the CEO, delegated to sign on behalf of the proponent's Chief Executive Officer;
  2. state whether the proponent has complied with each condition and procedure contained in this statement;
  3. provide verifiable evidence of compliance with each condition and procedure contained in this statement;
  4. state whether the proponent has complied with each key action contained in any environmental management plan or program required by this statement;
  5. provide verifiable evidence of conformance with each key action contained in any environmental management plan or program required by this statement;
  6. identify all non-compliances and non-conformances and describe the corrective and preventative actions taken in relation to each non-compliance or non-conformance;

7. review the effectiveness of all corrective and preventative actions taken; and
  8. describe the state of implementation of the proposal.
- 4-4 The proponent shall make the environmental compliance reports required by condition 4-1 publicly available in a manner approved by the CEO.

## **5 Oxides of Nitrogen Emissions**

- 5-1 The proponent shall design and construct the bio-refinery to meet a total plant NO<sub>x</sub> emission rate not exceeding 3.6 grams per second through the utilisation of low NO<sub>x</sub> gas burner and engine technology and other NO<sub>x</sub> emissions reduction technology.
- 5-2 Within 12 months following commencement of operation, the proponent shall submit a “Nitrous Oxides and Nitrogen Dioxide Concentration” report to the Department of Environment and Conservation to demonstrate that:
1. cumulative ground level concentrations of nitrogen dioxide at Wells Park meet the National Environmental Protection Measures or other relevant health criteria; and
  2. cumulative ground level concentrations of nitrous oxides at the Recreational Reserve on the western boundary of the site meet the relevant World Health Organisation criteria for vegetation,

under worst-case emissions and meteorological conditions.

## **6 Odour Management**

- 6-1 At least one month prior to commencement of operations, the proponent shall submit to the CEO an Odour Management Plan to manage the impacts of odour on health and amenity.
- 6-2 The Odour Management Plan shall be prepared having regard to the advice of the City of Rockingham and shall address the following:
1. the biofilter commissioning period;
  2. the procedures for the replacement of the biofilter media;
  3. an initial dynamic olfactometry determination;
  4. regular checks of biofilter loading to ensure that the biofilter is balanced and to identify any short circuits (e.g. surface flow rate measurements and smoke tests);
  5. regular qualitative determination of odour from the facility;
  6. contingency plans during upset or maintenance conditions; and

7. complaint registration, investigation, response and reporting.
- 6-3 The proponent shall implement the Odour Management Plan.
- 6-4 The proponent shall make the Odour Management Plan publicly available in a manner approved by the CEO.

## **7 Independent Design Review**

- 7-1 The proponent shall undertake an Independent Design Review of the proposed plant technology, conducted by an engineering consultancy approved by the CEO which specialises in design, construction, commissioning and monitoring of large industrial equipment. The proponent shall also seek specialist input from international experts where required.
- 7-2 The Independent Design Review shall:
  1. assess the engineering design details for the proposal, including a statement as to whether the design meets international best practice in terms of plant technology, gaseous emissions and odour control and management;
  2. confirm that the proposed technology will result in emissions being equal to, or below, the performance levels specified in *Proposed Kwinana Ethanol Bio-Refinery – Primary Energy*, Appendix 4, Umwelt (Australia) Pty Limited (February 2007); and
  3. be prepared in consultation with the CEO and the City of Rockingham.
- 7-3 The proponent shall submit the final copy of the Independent Design Review to the CEO and the City of Rockingham at least one month before the commencement of construction works.

Note: the CEO may, in considering the proponent's works approval application, place conditions on any works approval (or amend the terms of any works approval) consistent with the findings of the Independent Design Review.

## **8 Noise Management**

- 8-1 At least one month prior to commencement of construction, the proponent shall submit to the CEO a Noise Management Plan.
- 8-2 The Noise Management Plan shall be prepared on the advice of the City of Rockingham and shall demonstrate that noise emanating from the bio-refinery is as low as reasonably practicable and that compliance with the *Environmental Protection (Noise) Regulations 1997* (Noise Regulations) will be achieved at all noise-sensitive receptors under default worst-case meteorological conditions.
- 8-3 The Noise Management Plan shall include:

1. remodelling of plant noise emissions based on final plant layout and equipment selection;
2. procedures for purchasing quiet equipment which includes noise limits for key items of equipment which will be reflected in supply contracts; and
3. noise reduction measures to be implemented prior to plant operation to achieve compliance with the Noise Regulations, if required.

Note: Default worst case meteorological conditions at night (i.e. three metres per second wind speed, 2°C per 100 metre temperature inversion lapse rate, 15°C temperature, 50% relative humidity), with a positive wind direction from source to receiver.

- 8-4 The proponent shall implement the Noise Management Plan.
- 8-5 The proponent shall make the Noise Management Plan publicly available in a manner approved by the CEO.
- 8-6 Within six months following commencement of operation, the proponent shall submit a Noise Monitoring Report to the requirements of the CEO.
- 8-7 Noise emissions from the proposal shall comply with the applicable assigned levels under the Noise Regulations for residential premises in north Rockingham.
- 8-8 To avoid doubt, the proponent shall ensure the proposal complies with the assigned levels as required by condition 8-7 by erecting barriers or taking such other measures, including but not limited to:
- (a) the construction of a noise barrier south of the Cooperative Bulk Handling facility as detailed in *Proposed Kwinana Ethanol Bio-Refinery – Primary Energy*, Umwelt (Australia) Pty Limited (February 2007); or
  - (b) the construction of such other structures on the proposal site.

## Notes

1. The Minister for the Environment will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environment and Conservation over the fulfilment of the requirements of the conditions.
2. The proponent is required to apply for a Works Approval and Licence for this project under the provisions of Part V of the *Environmental Protection Act 1986*.

David Templeman MLA  
MINISTER FOR THE ENVIRONMENT; CLIMATE CHANGE; PEEL

## Schedule 1

### The Proposal (Assessment No. 1668)

#### General Description

The proposal is to construct and operate an ethanol refinery (bio-refinery) on a 19 ha site in the IP14 East Rockingham Industrial Park which adjoins the southern boundary of the Kwinana Industrial Area (See figures 1 and 2).

The bio-refinery will consist of a series of processes that convert wheat and grain into:

- bio-fuel, or fuel grade ethanol;
- bio-gas (predominantly methane), which will fuel generators to produce electricity;
- aqueous ammonia, a precursor of fertiliser; and
- fertiliser.

#### Summary Description

A summary of the key proposal characteristics is presented in Table 1.

**Table 1: Summary of the Key Proposal Characteristics**

Element	Description
Site location	45km south-west of Perth, within the IP14 East Rockingham Industrial Park and Kwinana Industrial Area
Site area	19 ha
Products generated	Fuel grade ethanol – 160 ML/a Fertiliser - 350,000 t/a Aqueous ammonia - 16,000 t/a
Inputs	Wheat or other grains, starch and wheat dust - 400,000 t/a Fertiliser input material (trace elements and granular phosphate) - 280,000 t/a
Hours of operation	Construction – 7am – 7pm, Monday to Saturday Operation – 24 hour day, 7 day week Transport of ethanol - Monday to Saturday Transport of aqueous ammonia and fertiliser - Monday to Friday
Power generation	23 MW
Net reduction of greenhouse gases	400,000 t/a of CO <sub>2-e</sub>
Water requirements	50,000 kL/a, sourced from Sepia Depression Line or alternative source.

#### Abbreviations:

ha – hectare

kL/a – kilolitres per annum

ML/a – megalitres per annum

MW – megawatts

t/a – tonnes per annum

-e - equivalent

#### Figures (attached)

Figure 1 - Location of the Kwinana ethanol bio-refinery.

Figure 2 - Process diagram for the Kwinana ethanol bio-refinery.



Figure 1 - Location of the Kwinana ethanol bio-refinery

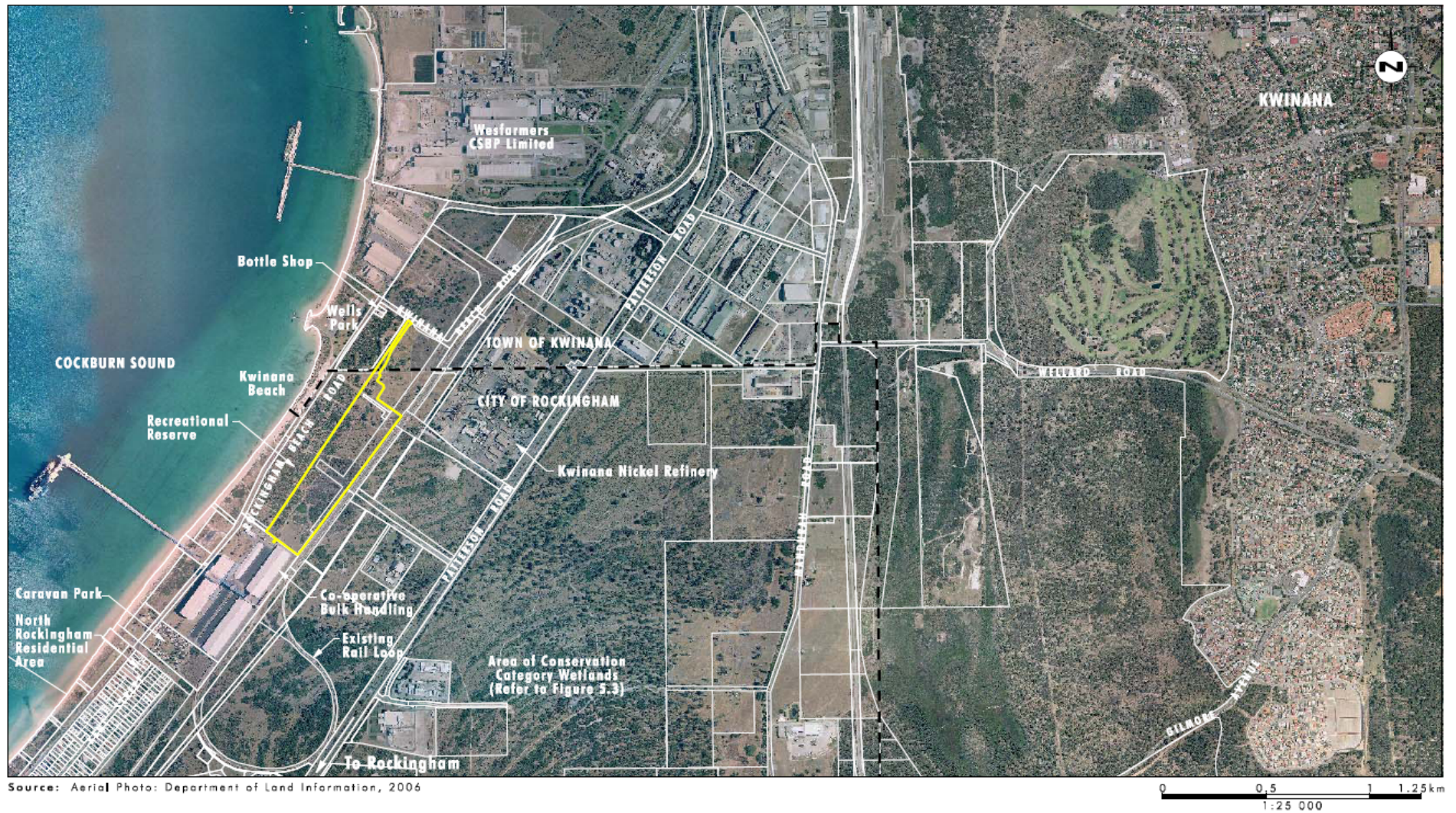




Figure 2 - Process diagram for the Kwinana ethanol bio-refinery

