MINISTER FOR THE ENVIRONMENT AND HERITAGE

Statement No.

000622

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

PINJARRA COGENERATION PROJECT

Proposal: The construction and operation of a natural gas fired cogeneration facility on a 2.5 hectare site located within Alcoa's Pinjarra Alumina Refinery.

The proposal is documented in schedule 1 of this statement.

Proponent: Alinta Cogeneration (Alcoa Pinjarra) Pty Ltd

Proponent Address: c/o AlintaGas Limited
GPO Box W2030
PERTH WA 6846

Assessment Number: 1462

Report of the Environmental Protection Authority: Bulletin 1081

The proposal referred to above may be implemented subject to the following conditions and procedures:

Procedural conditions

1 Implementation and Changes

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

Published on

18 MAR 2003

29th FLOOR, ALLENDALE SQUARE, 77 ST. GEORGE'S TERRACE, PERTH 6000 TELEPHONE: (08) 9220 5050 FACSIMILE: (08) 9221 4665/8
E-MAIL: judy-edwards@dpc.wa.gov.au

1-2 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment and Heritage determines, on advice of the Environmental Protection Authority, is substantial, the proponent shall refer the matter to the Environmental Protection Authority.

1-3 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment and Heritage determines, on advice of the Environmental Protection Authority, is not substantial, the proponent may implement those changes upon receipt of written advice.

2 Proponent Commitments

2-1 The proponent shall implement the environmental management commitments documented in schedule 2 of this statement.

2-2 The proponent shall implement subsequent environmental management commitments which the proponent makes as part of the fulfilment of the conditions in this statement.

3 Proponent Nomination and Contact Details

3-1 The proponent for the time being nominated by the Minister for the Environment and Heritage under section 38(6) or (7) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal until such time as the Minister for the Environment and Heritage has exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person as the proponent for the proposal.

3-2 If the proponent wishes to relinquish the nomination, the proponent shall apply for the transfer of proponent and provide a letter with a copy of this statement endorsed by the proposed replacement proponent that the proposal will be carried out in accordance with this statement. Contact details and appropriate documentation on the capability of the proposed replacement proponent to carry out the proposal shall also be provided.

3-3 The nominated proponent shall notify the Department of Environmental Protection of any change of contact name and address within 60 days of such change.

4 Commencement and Time Limit of Approval

4-1 The proponent shall provide evidence to the Minister for the Environment and Heritage within five years of the date of this statement that the proposal has been substantially commenced or the approval granted in this statement shall lapse and be void.

Note: The Minister for the Environment and Heritage will determine any dispute as to whether the proposal has been substantially commenced.

4-2 The proponent shall make application for any extension of approval for the substantial commencement of the proposal beyond five years from the date of this statement to the Minister for the Environment and Heritage, prior to the expiration of the five-year period referred to in condition 4-1.

The application shall demonstrate that:

- the environmental factors of the proposal have not changed significantly;
- new, significant, environmental issues have not arisen; and
- all relevant government authorities have been consulted.

Note: The Minister for the Environment and Heritage may consider the grant of an extension of the time limit of approval not exceeding five years for the substantial commencement of the proposal.

Environmental conditions

5 Compliance Audit and Performance Review

5-1 The proponent shall prepare an audit program in consultation with and submit compliance reports to the Department of Environmental Protection which address:

- the implementation of the proposal as defined in schedule 1 of this statement;
- evidence of compliance with the conditions and commitments; and
- the performance of the environmental management plans and programs.

Note: Under sections 48(1) and 47(2) of the *Environmental Protection Act 1986*, the Chief Executive Officer of the Department of Environmental Protection is empowered to audit the compliance of the proponent with the statement and should directly receive the compliance documentation, including environmental management plans, related to the conditions, procedures and commitments contained in this statement.

Usually, the Department of Environmental Protection prepares an audit table which can be utilised by the proponent, if required, to prepare an audit program to ensure that the proposal is implemented as required. The Chief Executive Officer is responsible for the preparation of written advice to the proponent, which is signed off by either the Minister or, under an endorsed condition clearance process, a delegate within the Environmental Protection Authority or the Department of Environmental Protection that the requirements have been met.

5-2 The proponent shall submit a performance review report every five years after the start of the operations phase to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority, which addresses:

- the major environmental issues associated with the project; the targets for those issues; the methodologies used to achieve these; and the key indicators of environmental performance measured against those targets;

- the level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best available technology where practicable;

- significant improvements gained in environmental management, including the use of external peer reviews;

- stakeholder and community consultation about environmental performance and the outcomes of that consultation, including a report of any on-going concerns being expressed; and

- the proposed environmental targets over the next five years, including improvements in technology and management processes.

6 Decommissioning

6-1 Prior to construction, the proponent shall prepare, and subsequently implement, a Preliminary Decommissioning Plan, which provides the framework to ensure that the site is left in an environmentally acceptable condition to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.

The Preliminary Decommissioning Plan shall address:

(1) rationale for the siting and design of plant and infrastructure as relevant to environmental protection, and conceptual plans for the removal or, if appropriate, retention of plant and infrastructure;

(2) a conceptual rehabilitation plan for all disturbed areas and a description of a process to agree on the end land use(s) with all stakeholders;

(3) a conceptual plan for a care and maintenance phase; and

(4) management of noxious materials to avoid the creation of contaminated areas.

6-2 At least six months prior to the anticipated date of decommissioning, or at a time agreed with the Environmental Protection Authority, the proponent shall prepare a Final Decommissioning Plan designed to ensure that the site is left in an environmentally acceptable condition to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.

The Final Decommissioning Plan shall address:

(1) removal or, if appropriate, retention of plant and infrastructure in consultation with relevant stakeholders;

(2) rehabilitation of all disturbed areas to a standard suitable for the agreed new land use(s); and

(3) identification of contaminated areas, including provision of evidence of notification and proposed management measures to relevant statutory authorities.

6-3 The proponent shall implement the Final Decommissioning Plan required by condition 6-2 until such time as the Minister for the Environment and Heritage determines, on advice of the Environmental Protection Authority, that the proponent's decommissioning responsibilities have been fulfilled.

6-4 The proponent shall make the Final Decommissioning Plan required by condition 6-2 publicly available, to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.

7 Greenhouse Gas Emissions

7-1 Prior to commencement of construction of the power plant, the proponent shall prepare a Greenhouse Gas Emissions Management Plan to:

- ensure that "greenhouse gas" emissions from the project are adequately addressed and best available efficient technologies are used to minimise total net "greenhouse gas" emissions and/or "greenhouse gas" emissions per unit of product; and

- mitigate "greenhouse gas" emissions in accordance with the Framework Convention on Climate Change 1992, and consistent with the National Greenhouse Strategy;

to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.

This Plan shall include:

(1) calculation of the "greenhouse gas" emissions associated with the proposal, as indicated in *Minimising Greenhouse Gas Emissions, Guidance for the Assessment of Environmental Factors, No. 12* published by the Environmental Protection Authority;

(2) specific measures to minimise the total net "greenhouse gas" emissions and/or the "greenhouse gas" emissions per unit of product associated with the proposal;

(3) monitoring of "greenhouse gas" emissions;

(4) estimation of the "greenhouse gas" efficiency of the project (per unit of product and/or other agreed performance indicators) and comparison with the efficiencies of other comparable projects producing a similar product;

(5) analysis of the extent to which the proposal meets the requirements of the National Greenhouse Strategy using a combination of:

- "no regrets" measures;
- "beyond no regrets" measures;
- land use change or forestry offsets; and
- international flexibility mechanisms.

(6) a target set by the proponent for the reduction of total net "greenhouse gas" emissions and/or "greenhouse gas" emissions per unit of product over time, and annual reporting of progress made in achieving this target.

Note: In part 5 above, the following definitions apply:

(1) "no regrets" measures are those that can be implemented by a proponent which are effectively cost-neutral and provide the proponent with returns in savings which offset the initial capital expenditure that may be incurred; and

(2) "beyond no regrets" measures are those that can be implemented by a proponent which involve some additional cost that is not expected to be recovered.

7-2 The proponent shall implement the Greenhouse Gas Emissions Management Plan required by condition 7-1 to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.

7-3 The proponent shall make the Greenhouse Gas Emissions Management Plan required by condition 7-1 publicly available, to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.

Procedures

1 Where a condition states "to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority", the Chief Executive Officer of the Department of Environmental Protection will obtain that advice for the preparation of written advice to the proponent.

2 The Environmental Protection Authority may seek advice from other agencies, as required, in order to provide its advice to the Chief Executive Officer of the Department of Environmental Protection.

Notes

1 The Minister for the Environment and Heritage will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environmental Protection 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*.

Dr Judy Edwards MLA
MINISTER FOR THE ENVIRONMENT AND HERITAGE

18 MAR 2003

Schedule 1

The Proposal (Assessment No. 1462)

The proposal is to construct and operate a natural gas fired cogeneration facility on a 2.5 hectare site located within Alcoa's Pinjarra Alumina Refinery (Figures 1, 2, and 3).

The proponent will own the facility and will supply steam to Alcoa for refinery purposes. The proponent will sell the power generated to customers within the South-West Interconnected System. Alcoa will operate the facility within the framework of the Pinjarra refinery operations.

The cogeneration facility will be built in two stages, each comprising a self-contained unit. It is envisaged that each unit will be capable of generating up to 160 megawatts of electricity and up to 222 tonnes per hour of high pressure steam. All of the electrical power generated will be sold to customers connected to the South-West Interconnected System. Waste heat from the gas turbines will be used to generate steam that will be used within the refinery.

The main characteristics of the proposal are summarised in Table 1 below.

Table 1 - Key Proposal Characteristics

Element	Description	
	Stage 1	**Stages 1 & 2**
Project Purpose.	To supply steam to the Alcoa Pinjarra Refinery and electricity to the SWIS grid.	To supply steam to the Alcoa Pinjarra Refinery and electricity to the SWIS grid.
Plant Operation.	Base Load Plant - Continuous operation, only shut down for maintenance.	Base Load Plant - Continuous operation, only shut down for maintenance.
Project Life.	20 years	22 years
Power Generating Capacity.	160MW (sent out)	320MW
High Pressure Steam Production ($7.2MPa_{(g)}$ at 475°C).	222tph	444tph
Facility Footprint.	5,600m^2	11,000m^2
Net Water Loss: • Condensate losses from stack (with GT evaporative inlet air cooling). • Condensate losses from polishing condensate supply. • Condensate losses from cooling tower (GT and HRSG).[1]	 29ML/yr 12ML/yr 58ML/yr	 58ML/yr 23ML/yr 117ML/yr
Natural Gas Input (maximum).	15PJ/yr	30PJ/yr
Natural Gas Pipeline Extension.	160m	160m
Transmission lines.	300m	300m
Plant Facilities: • Number of Stacks. • Height of Stacks. • Number of Cooling Towers.	 1 40m 1 (3 cells)	 2 40m 1 (4 cells)

Table 1 - Key Proposal Characteristics (continued)

Element	Description	
	Stage 1	**Stages 1 & 2**
Gaseous Emissions: NO_X [2] CO_2 - gross[3] CO_2 - net [4]	 593tpa 907,500tpa 516,000tpa	 1186tpa 1,815,000tpa 1,032,000tpa
Noise.	Tender for equipment supply will require compliance with the *Environmental Protection (Noise) Regulations, 1997.*	Tender for equipment supply will require compliance with the *Environmental Protection (Noise) Regulations, 1997.*
Liquid Effluent Discharges (blowdown returned to refinery).	220ML/yr	440ML/yr
Solid Waste (construction).	Less than 20tpa	Less than 30tpa
Solid Waste (operations).	Less than 10tpa	Less than 15tpa
Construction Period.	15 months	27 months
Workforce: • Construction (peak). • Operation.	 60 No additional permanent employees.	 60 No additional permanent employees.

Cogeneration unit generating capacity of up to 160MW per unit under consideration. Table reflects key characteristics for generating capacity of 160MW per unit.

Notes for Table 1:

(1) Water losses may be significantly reduced by installation of plume abatement technology under evaluation.

(2) The cogeneration plant will use dry low NO_X burners and emit less than 25ppmv NO_X (expressed at 0°C, 1013.25hPa (dry) and 15% O_2).

(3) Gross emissions for both electricity and steam production, without apportionment of fuel energy to steam and electricity, nor accounting for refinery energy savings through reduced fuel consumption in the existing boilers and efficiencies in steam use.

(4) Net project emissions for both electricity and steam production, taking account of refinery energy efficiency improvements.

Abbreviations for Table 1:

°C	degrees Celsius
CO_2	carbon dioxide
(g)	gauge pressure
GT	gas turbine
hPa	hectopascals
HRSG	heat recovery steam generator
m	metres
m^2	square metres
m^3/yr	cubic metres per year
MW	megawatts
ML/yr	megalitres per year
MPa	megapascals
NO_X	nitrogen oxides
O_2	oxygen
PJ/yr	petajoules per year
ppmv	parts per million by volume
SWIS	South West Interconnected System
tpa	tonnes per annum
tph	tonnes per hour

Figures (attached)

Figure 1: Regional location;
Figure 2: Location plan; and
Figure 3: Stage 1 and Stage 2 cogeneration facility layout.

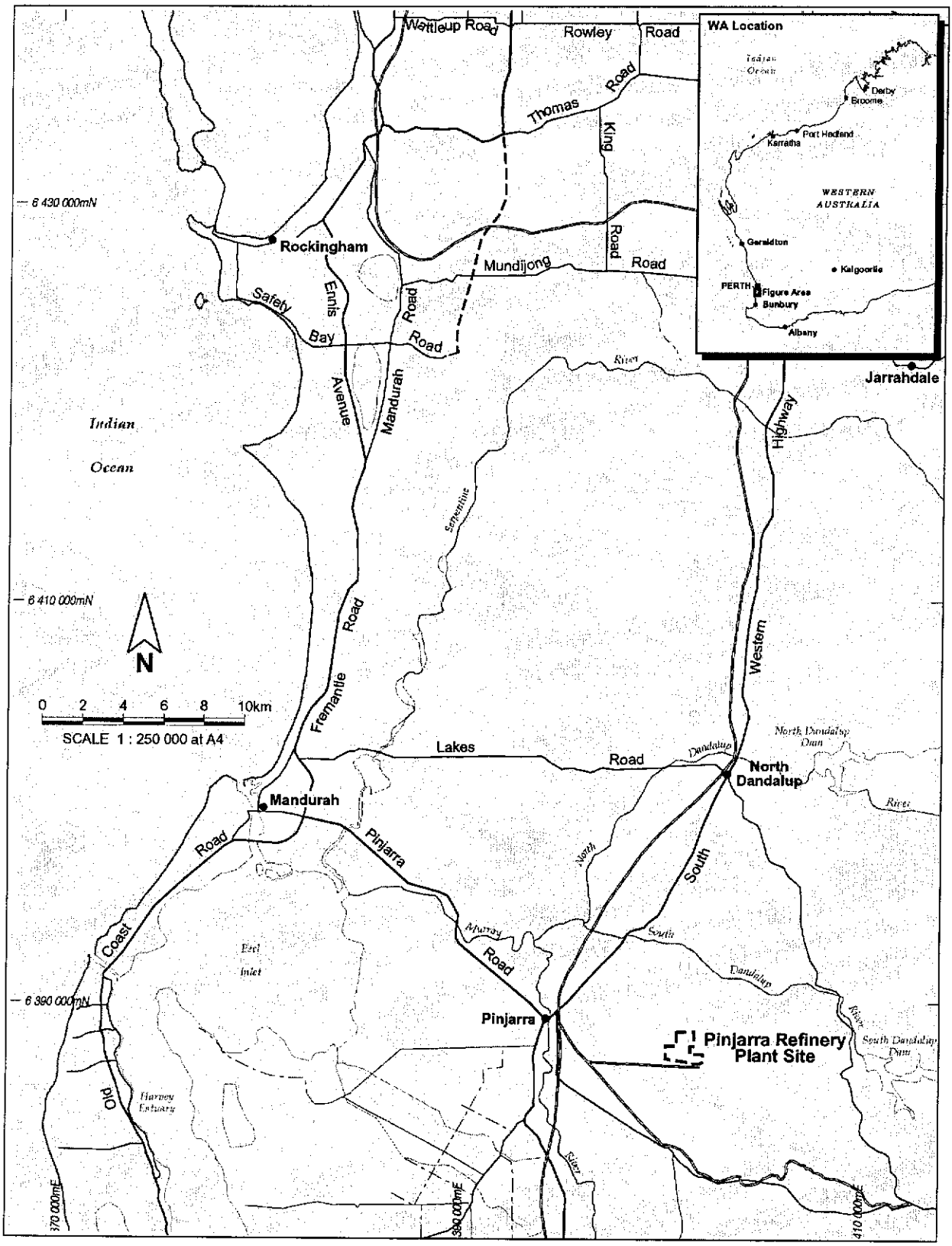

Figure 1: Regional location

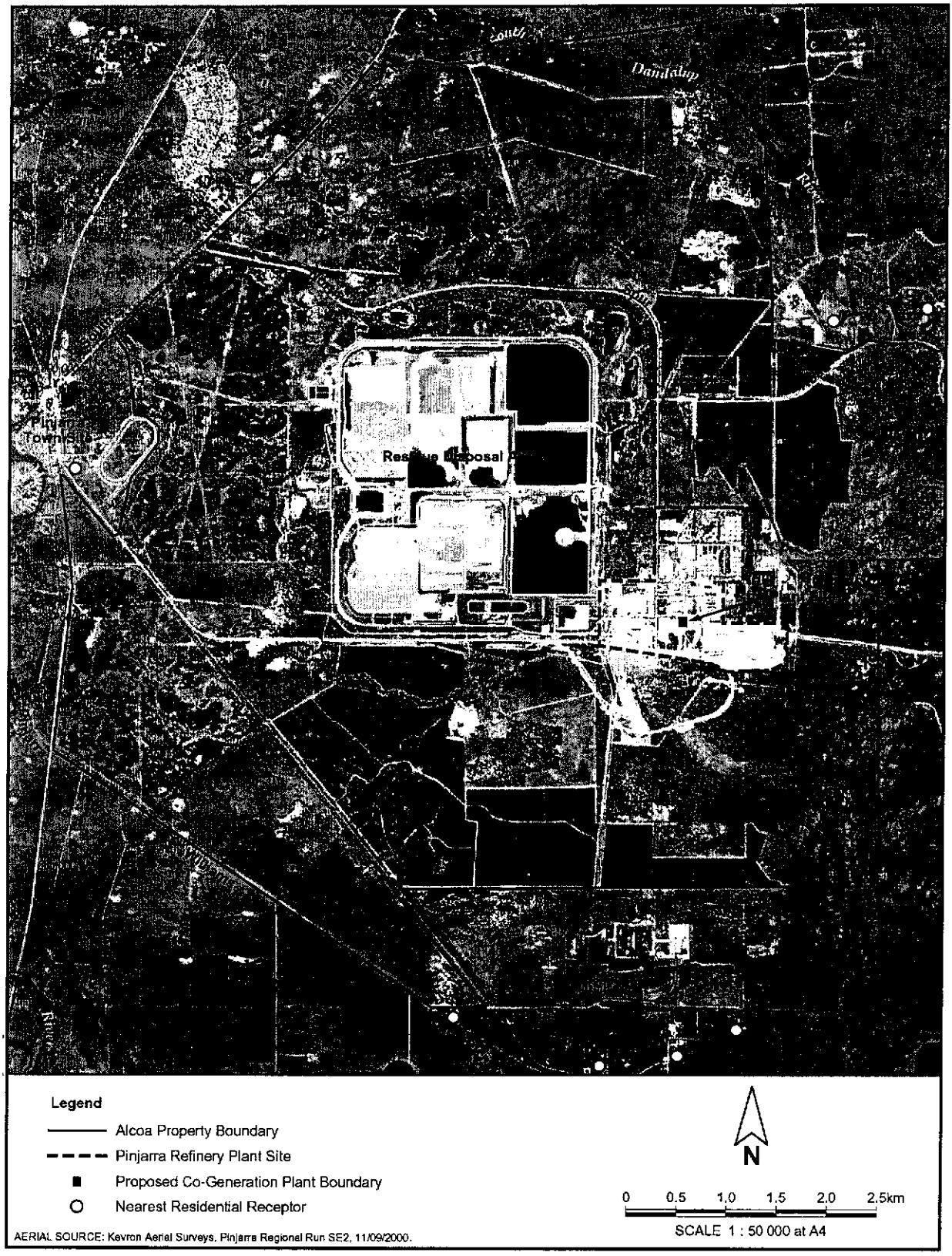

Figure 2: Location plan

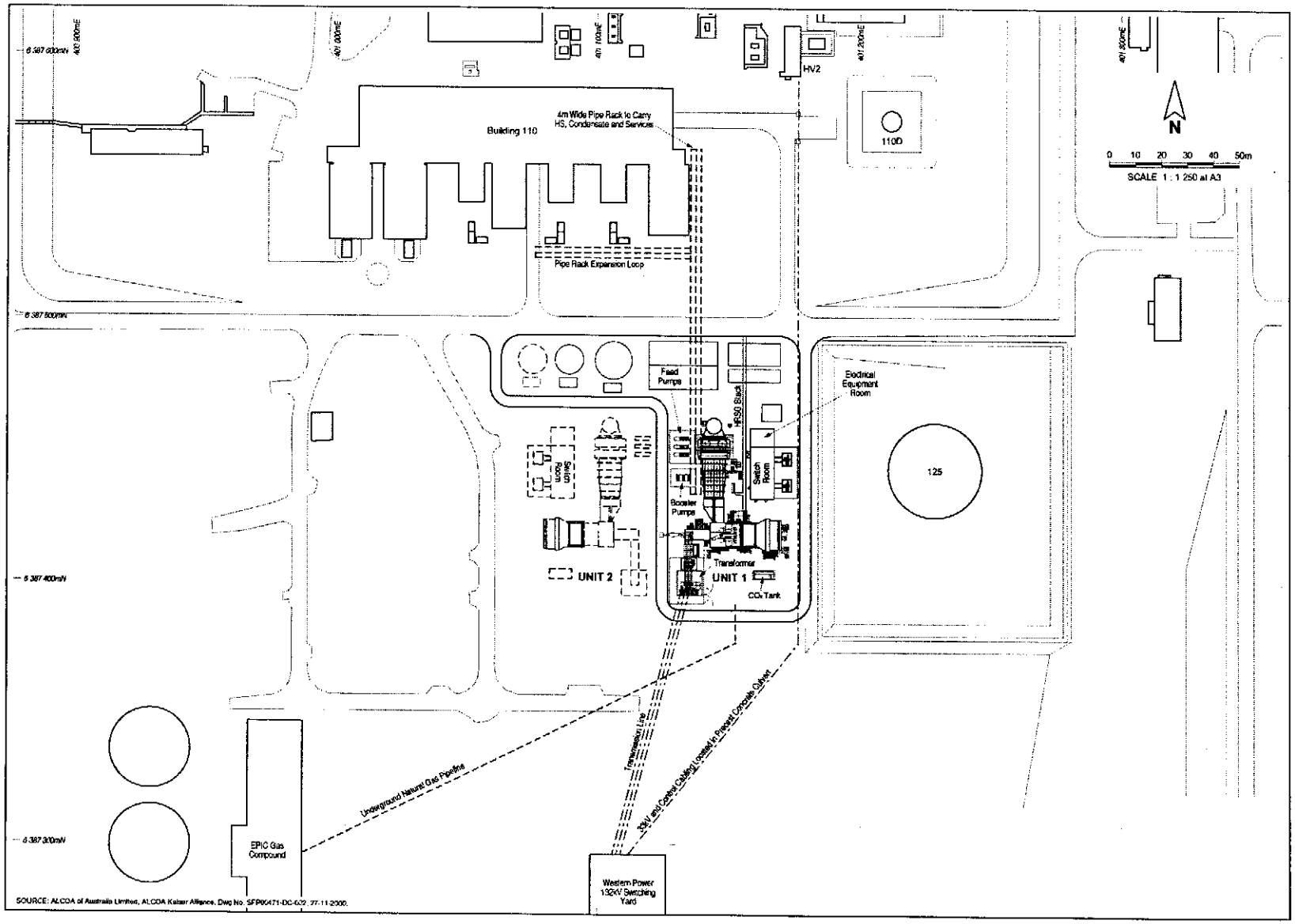

Figure 3: Stage 1 and Stage 2 cogeneration facility layout

Proponent's Environmental Management Commitments

December 2002

PINJARRA COGENERATION PROJECT

(Assessment No. 1462)

Alinta Cogeneration (Alcoa Pinjarra) Pty Ltd

Schedule 2

Pinjarra Cogeneration Project (Assessment No. 1462)
Proponent's Consolidated Environmental Management Commitments

	Topic	Objective	Action	Timing	Advice
1	Noise	To protect the amenity of nearby residents from noise impacts.	1.1 Incorporate appropriate noise attenuation measures into project design to reduce noise levels from the plant to as low as is reasonably practicable.	1.1 Project design and construction.	Gas turbine manufacturer, design engineers and noise consultant.
			1.2 Submit to the DEP for approval, relevant noise specifications for the detailed project design, and additional noise modelling based on these specifications.	1.2 Project design.	
		Acceptable noise impacts during construction.	1.3 Implement the Australian Standard 2436-1981 'Guide to noise control on construction, maintenance and demolition sites' during construction, and schedule construction activities to minimise additional sources of noise outside the hours of 07.00-19.00. Communicate with potentially affected neighbours when exceptional circumstances require extension of noisy activities outside this period.	1.3 Project construction.	Noise consultant and neighbours.
		Confirm noise management objectives achieved.	1.4 Confirm compliance with the noise regulations through an appropriate monitoring and modelling program. Submit a noise monitoring and assessment report to the DEP for approval to demonstrate compliance with the *Environmental Protection (Noise) Regulations, 1997*.	1.4 On completion of Alcoa's current noise abatement program (end of 2002) and post-commissioning of cogeneration project.	Noise consultant and Alcoa.

	Topic	Objective	Action	Timing	Advice
2	Water consumption	Optimise re-use of water within the project and the refinery. Confirm predicted water consumption.	2.1 Design water flows for the project to maximise water recycling and re-use. 2.2 Monitor project water consumption as part of the ongoing refinery water balance studies and fresh water use reduction plan.	2.1 Project design and operation. 2.2 Post-commissioning and ongoing periodic evaluation.	Design engineers, Alcoa, Water Corporation and DEP. Design engineers and Alcoa.
3	NO_X Emissions	Ensure that NO_x emissions are as low as is reasonably practicable and meet statutory requirement and recognised national standards including the NEPM for Ambient Air Quality and the requirements of Section 51 of the *Environmental Protection Act 1986*. Confirm NO_x management objectives are met and to meet licensing and NPI reporting requirements.	3.1 Incorporate dry low NO_X burners into the plant design which are capable of consistently achieving NO_X emission concentrations of 25ppmv or below. 3.2 Sample, analyse and report on the stack emissions for NO_X on a six-monthly basis until performance is established and thereafter annually.	3.1 Project design and construction. 3.2 Post-commissioning six-monthly until performance is established and then annually thereafter.	Gas turbine manufacturer, Alcoa. Monitoring consultants, Alcoa.
4	Environmental Management	To ensure construction, operation and decommissioning phases of the project are managed to minimise environmental impacts and comply with relevant regulatory and company standards and guidelines. Confirm the operational environmental performance objectives of the project and applicable standards and conditions are met and to promote continual improvement.	4.1 Prepare an environmental management program for the project to be used within the framework of Alcoa's existing Environmental Management System (EMS) for the refinery. 4.2 Implement the environmental management program. 4.3 Audit the environmental performance of the project in the context of Alcoa's existing refinery.	4.1 Prior to construction. 4.2 During construction and operation of the project. 4.3 Periodically throughout the life of the project, including annual reporting.	Alcoa and accredited ISO 14001 certifier. Alcoa Audit and accredited ISO 14001 certifier. Periodic DEP inspection/audit.
5	Community Consultation	Keep the local community and other interested stakeholders informed of the development and operation of the project and respond to concerns and input of ideas.	5.1 Ongoing community and stakeholder consultation program.	5.1 Throughout the life of the project, with particular emphasis during project planning, approval and design.	Relevant local and regional authorities, Pinjarra Refinery Community Consultative Network, neighbours, other interested community groups, elected representatives and relevant government agencies.

	Topic	Objective	Action	Timing	Advice
6	Risk Management	Ensure the cogeneration plant does not compromise existing occupational and public safety standards. As above.	6.1 Undertake qualitative risk assessment for the project within the overall refinery context. 6.2 Incorporate results of risk assessment in project design, construction and operation.	6.1 Detailed project design. 6.2 Project design, construction and operation.	Alcoa and relevant government agencies.

Abbreviations

DEP Department of Environmental Protection
ISO International Standards Organisation
NEPM National Environment Protection Measure
NO_X nitrogen oxides
NPI National Pollutant Inventory