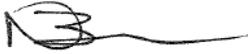


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Dated: 14 December 2007



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Section 1

Introduction

1.1 Overview

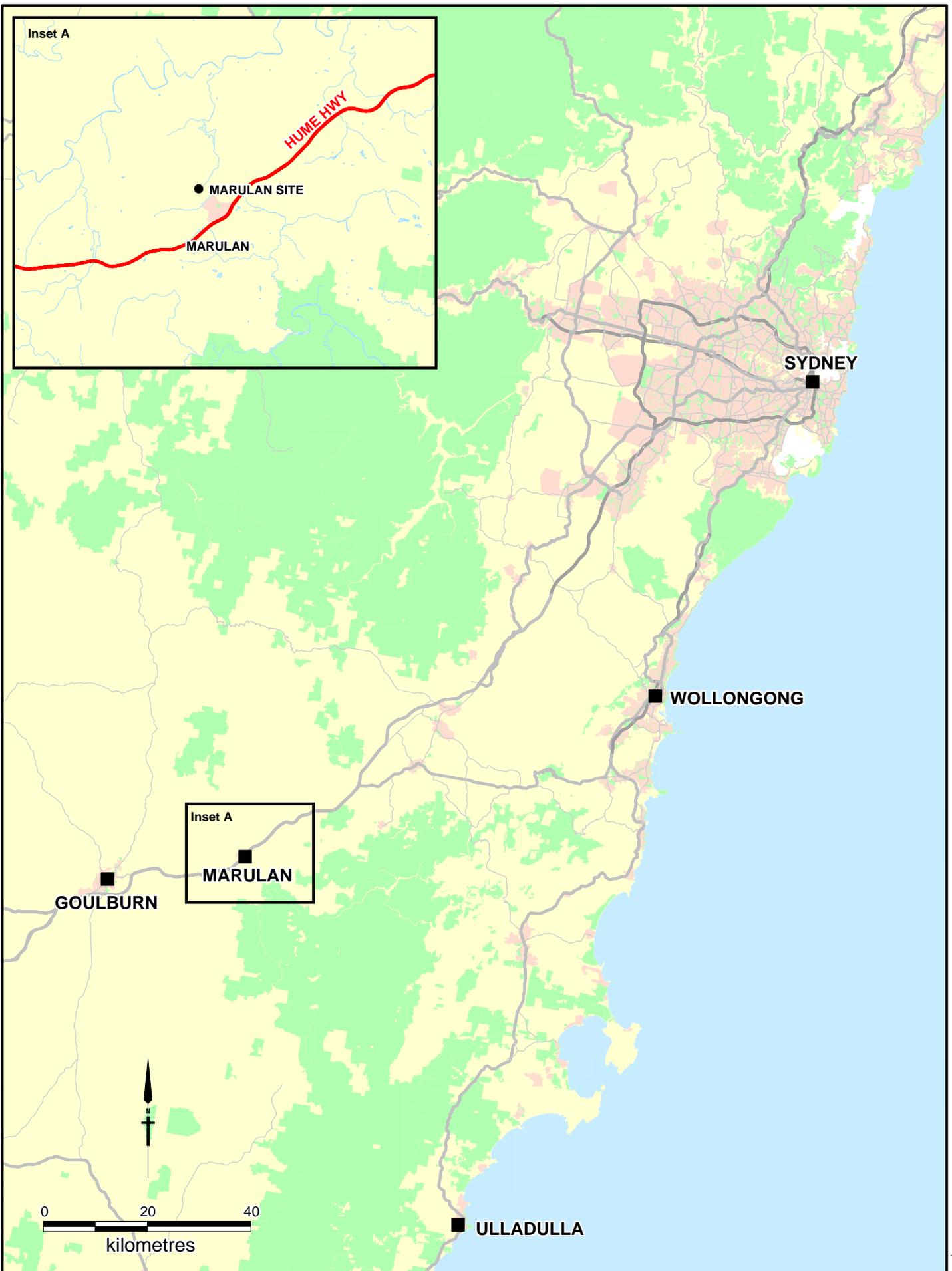
This is a Preliminary Environmental Assessment report was prepared under the provisions of Part 3A of the *Environmental Planning and Assessment Act 1979 (EP&A Act)*. It addresses the development of two separate gas turbine facilities on a site located near Marulan, NSW including necessary gas supply infrastructure for a lateral from the Moomba to Sydney gas pipeline and electricity connection to the transmission network grid operated by TransGrid. This document is accompanied by a Concept Plan Application (being a joint application by Delta Electricity and EnergyAustralia) and two Project Applications, which is submitted jointly (submitted by Delta Electricity and EnergyAustralia respectively for their separate gas turbine facilities , as part applications under section 75E(4) of the EP&A Act.

Delta Electricity and EnergyAustralia consulted with the DoP for two separate gas turbine facilities on a site located near Marulan. Subsequent to this, an application was made to DoP to request that the Minister for Planning form an opinion under Clause 6 of the State Environmental Planning Policy (Major Projects) 2005 that the proposed development is development of a kind described in Schedule 1 to the SEPP. This declaration was made on 8 October 2007 by Director-General as delegate for the Minister for Planning. A Concept Plan Application and two Project Applications under Part 3A of the EP&A Act 1979 are submitted with this Preliminary Environmental Assessment report.

This Preliminary Environmental Assessment has been structured to provide general environmental, cultural and socio-economic information about the site with details of the development to be provided in the form of subsequent Environmental Assessment Reports. Delta Electricity and EnergyAustralia seek Concept Plan Approval for two separate gas turbine facilities and associated shared infrastructure including access roads, the high voltage transmission grid connections and the gas pipeline. The Applications for Project Approval seek Project Approval for EnergyAustralia's facility and Project Approval for Stage 1 of the Delta Electricity facility. Further project applications, including assessment under another part of the EPA Act, would be sought for those elements only approved at Concept Approval level, such as the gas pipeline and Stage 2 of the Delta Electricity facility.

The assessment prepared for the Concept Plan Application would include an assessment of the cumulative impact of the two separate facilities in terms of construction and operation aspects at the site located near Marulan.

The proposed site is located approximately 12 km northwest of Marulan, as shown on **Figure 1**.



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Client DELTA ELECTRICITY AND ENERGY AUSTRALIA	Project PRELIMINARY ENVIRONMENTAL ASSESSMENT	Title REGIONAL LOCATION MAP
	Drawn: AJW Approved: DRAFT Date: 02/08/2007 Job No: 43177371 File No: 43177371-001H.wor	Figure: 1

Section 1

Introduction

1.2 Proponents

Delta Electricity and EnergyAustralia (the Proponents) are proposing to develop two separate gas turbine power generating facilities at the Marulan Site (referred herein as the "Project"). A gas pipeline and other shared infrastructure servicing both facilities would also be constructed along with high voltage transmission lines connecting each facility to the nearby TransGrid 330kV Marulan Substation.

Delta Electricity is a New South Wales (NSW) State Owned Corporation constituted under the Energy Services Corporations Act 1995. Delta Electricity produces approximately 12% of the electricity used by consumers in NSW, Victoria, South Australia, Queensland and the ACT¹. Most of Delta Electricity's generation occurs at four power stations located in NSW: Mt Piper and Wallerawang (near Lithgow), and Vales Point and Munmorah on the Central Coast. These stations have a combined generating capacity of 4,240 megawatts (MW). Small amounts of renewable energy are also produced from mini-hydro facilities located at Mt Piper near Lithgow and Chichester Dam and Dungog Water Treatment Plant in the upper Hunter Valley.

EnergyAustralia is a NSW State Owned Corporation constituted under the Energy Services Corporations Act 1995. EnergyAustralia operates the largest electricity network in Australia supplying electricity to more than three million people, across more than 20,000 square kilometres of Sydney, the Central Coast and the Hunter Valley. EnergyAustralia is also an electricity and gas retailer servicing customers across the eastern seaboard of Australia.

1.3 Project Need

Peak electricity demand in NSW is growing at a faster rate than average demand. This diverging trend between average or base load and peak load demand profiles can generally be attributed to the sustained period of strong economic growth and prosperity that has been occurring in Australia over the past 10 to 15 years.

The 2006 NEMMCO *Statement of Opportunities* predicts that over the next decade rising electricity demand of about 2% annually from the whole of NSW and will exceed existing generation capacity. To meet the immediate growth in demand for electricity, a number of additional power plants would be required to serve peaking capacity in the order of 300MW per annum for five years from 2009. Peak power demand is growing faster than base load demand, which necessitates investment in peaking power generation.

The proposed Delta Electricity facility (Stage 1) and EnergyAustralia facility would contribute positively to the NSW electricity market by providing peaking plants to service demand and ensure security of supply. If market demand requires, Delta Electricity facility (Stage 2) would contribute positively to the NSW electricity market by providing base load generation.

Based on the forecasts provided in the NEMMCO *Statement of Opportunities* reports and the Proponents' own analysis of current market conditions and potential future demand scenarios, the Proponents have identified the need to provide additional generating capacity to meet the likely short to medium-term shortfall in electrical supply during peak demand periods.

As the largest electricity retailer in NSW, EnergyAustralia purchases a significant volume of electricity in the National Electricity Market (NEM). As the supply demand balance tightens it is increasingly important for EnergyAustralia to supply its customers with electricity during periods of high wholesale market price, which are inherently difficult to predict.

¹ Delta Electricity Web Site September 2007 (www.de.com.au)

Section 1

Introduction

The facility would meet EnergyAustralia's commercial imperative to manage supply costs during peak demand periods and would also help secure the State's energy supplies into the future.

1.4 Project Justification

In order to meet the predicted deficit in NSW's peak electricity generating capacity Delta Electricity and EnergyAustralia propose to develop two separate gas power generating facilities (the Proposal).

Delta Electricity proposes to construct an electricity generating facility consisting of two open cycle gas turbines (Stage 1), which can be converted (Stage 2) to combined cycle turbines to generate base load electricity. The conversion of the Delta Electricity peaking plant to a base load plant would be dependent on future base load electricity demands in NSW.

Likewise, EnergyAustralia proposes to construct an electricity generating facility consisting of two open cycle gas turbines to provide electricity in peak demand periods.

Open cycle gas turbines represent one of the most effective options to provide electricity for short term peak demand. Open cycle generating facilities Delta Electricity and EnergyAustralia propose to construct can supply electricity to the grid at short notice and are therefore well suited to provide electricity in peak demand periods.

1.5 Project Benefits

Implementing the Project would benefit the local and regional community on a number of levels. Potential benefits include:

- increased reliability of supply during peak demand periods;
- improved security of electricity supply during system emergency or interruptions to supply;
- improved environmental outcomes due to lower greenhouse gas emissions per unit of output compared to conventional power generation technologies such as coal;
- provides social and economic benefits associated with the ability of the NSW supply network to meet peak energy demands; and
- the location of the proposed facilities is well suited as it is close to existing electricity transmission system and gas infrastructure.

The Proponents independently sought advice on the most appropriate location for a gas turbine facility in NSW. Such a site must be located close to existing gas and transmission infrastructure. The Marulan site was selected as the most appropriate available location for the gas turbine plants, with suitable land potentially available close to TransGrid's switchyard and to the Moomba to Sydney gas pipeline.

EnergyAustralia and Delta Electricity subsequently agreed to jointly purchase land to meet their individual requirements for the facilities. The purchased land is being sub-divided between Delta Electricity and EnergyAustralia.

Section 2

Project Description

2.1 Site Location

2.1.1 Marulan Site

The Marulan site is located on Canyonleigh Road, Brayton, approximately 12km northeast of the village of Marulan. The site is 19.6km from the Marulan Highway turnoff and 10km from the Canyonleigh-Brayton Road turnoff (refer to **Figure 2**). Delta Electricity and EnergyAustralia have entered into a contract to jointly purchase part of the property (being part of Lot 18 DP1056592, to be identified as Lot 2 DP1120270) from the current land owner for the development of the two separate gas turbine facilities.

The land to be purchased will be further subdivided such that Delta Electricity and EnergyAustralia are the registered proprietors of the land on which their respective facilities would be situated.

The land to be purchased comprises approximately 116ha of pasture land and dry eucalypt forest. The proposed facilities locations lie within a development envelope covering a partially cleared area and a tree covered area which continues on the higher ground east of the Wollondilly River (refer to **Figure 3**). It is situated on a bench approximately 20m above the river's edge at elevations ranging from approximately 590m to 615m Australian Height Datum (AHD). Overall the site slopes gently west towards the river. The site is located in the Upper Lachlan Shire local government area.

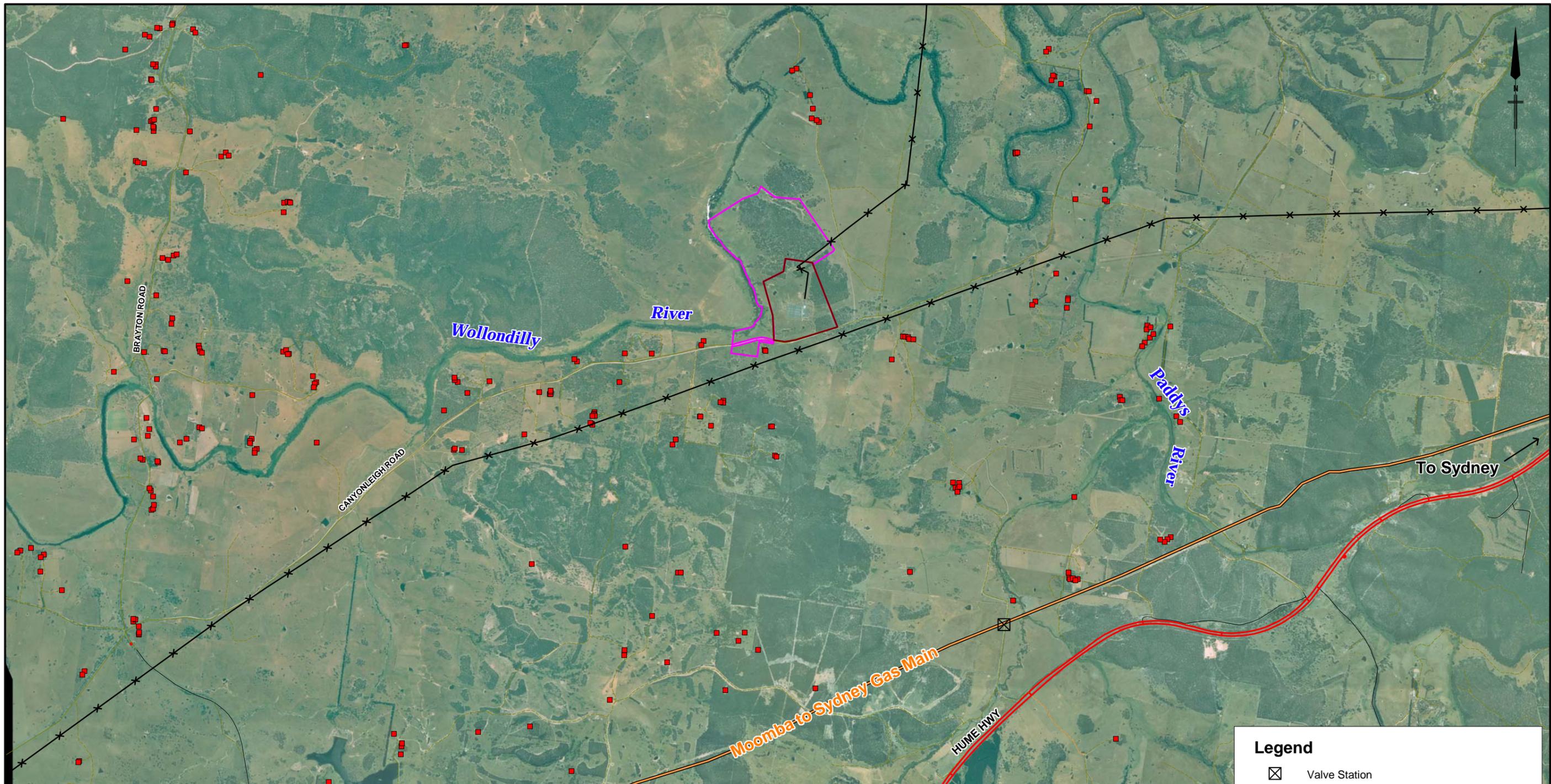
2.1.2 Linear Infrastructure

As outlined in **Section 2.4**, in addition to the two facilities, the Project includes the construction of linear infrastructure, including:

- a gas pipe line;
- access roads; and
- transmission lines.

An indicative route for the transmission lines and access road on the Marulan site is shown in Figure 3, the exact layout and position will be finalised during the detailed design stage.

The exact location of the gas pipe line will be finalised at the detailed design stage and, subject to the Minister's determination, will be subject to a future, separate project application. Delta Electricity and EnergyAustralia are currently considering route options for the gas pipe line within a corridor of land identified, with further studies and assessment underway. When identified route options for the gas pipeline have been considered, easements or other appropriate rights of tenure will be negotiated.



Legend

- ☒ Valve Station
- Buildings (Includes houses and farmsheds)
- Moomba to Sydney Gas Main
- x— Existing Transmission Lines
- Marulan Site
- TransGrid Switchyard

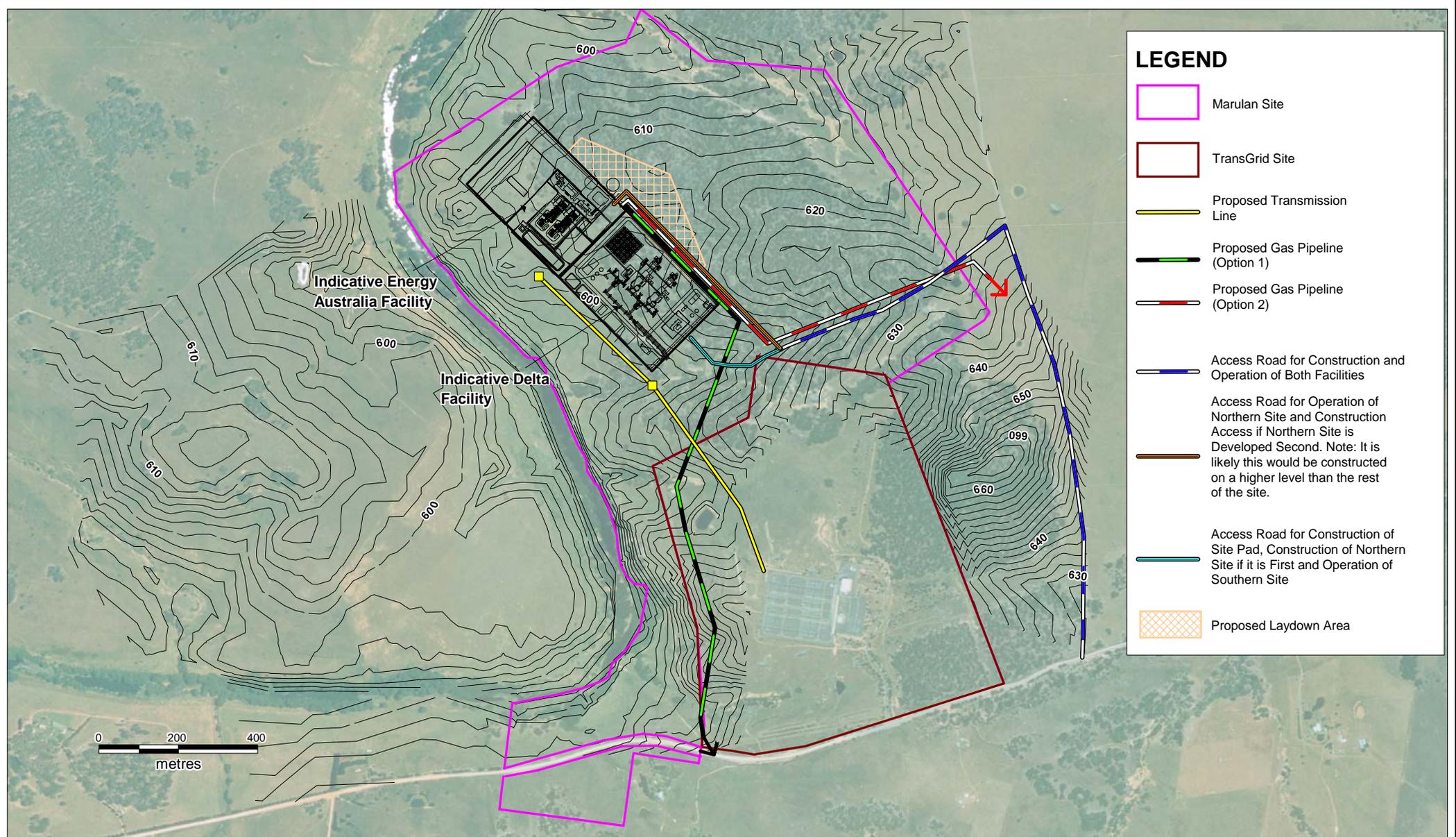


To Goulburn

Client DELTA ELECTRICITY AND ENERGY AUSTRALIA	Project PRELIMINARY ENVIRONMENTAL ASSESSMENT	Title SITE LOCATION
URS	Drawn: AJW Approved: DRAFT Date: 2/08/2007	Figure: 2
	Job No: 43177371 File No: 431773711-085.wor	

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 Map compiled using MapInfo StreetPro Data. © 2004 MapInfo Australia Pty Ltd, URS Australia and PSMA Australia Ltd. URS Australia, MapInfo Australia or PSMA Australia do not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that these companies shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.



LEGEND

- Marulan Site
- TransGrid Site
- Proposed Transmission Line
- Proposed Gas Pipeline (Option 1)
- Proposed Gas Pipeline (Option 2)
- Access Road for Construction and Operation of Both Facilities
- Access Road for Operation of Northern Site and Construction Access if Northern Site is Developed Second. Note: It is likely this would be constructed on a higher level than the rest of the site.
- Access Road for Construction of Site Pad, Construction of Northern Site if it is First and Operation of Southern Site
- Proposed Laydown Area



Client DELTA ELECTRICITY AND ENERGY AUSTRALIA	Project PRELIMINARY ENVIRONMENTAL ASSESSMENT	Title INDICATIVE LOCATION AND LAYOUT
	Drawn: AJW Approved: NB Date: 16.11.2007	Figure: 3
Job No: 43177371 File No: 43177371-103.wor		

Section 2

Project Description

2.2 Delta Electricity Gas Turbine Power Facility

The development of Delta Electricity's gas turbine facility would comprise the following main elements:

- gas turbine facility including ancillary equipment, process control system and administration facilities; and
- associated infrastructure within its lot i.e., connection to the electricity transmission line, connection to the gas inlet receiver, internal roads and water storage.

2.2.1 Gas Turbine Facility

The implementation of the proposed gas turbine facility for Delta Electricity would be carried out in two stages:

- Stage 1 Two open cycle gas turbines with a total capacity in the range of 250 to 350 MW. Each turbine could have a capacity in the order of 125 to 175 MW depending on final equipment selected.
- Stage 2: Conversion to combined cycle facility to generate electricity for intermediate/base load electricity demand. The proposed capacity of the Stage 2 combined cycle plant is in the range of 400 to 450 MW.

The main components of the open cycle gas turbine facility would be:

- two open cycle gas turbines comprising compressor, combustion and turbine stages (including low NO_x burners) and exhaust stacks (approx. 40m height) each. Turbines would be connected to air cooled generators. The turbines would be converted to combined cycle during Stage 2 by inclusion of a heat recovery steam generator (HRSG), steam turbine, generator and an air cooled condenser;
- ancillary equipment including power transformers, demineralised water storage and safety equipment;
- process control and monitoring systems; and
- administration, amenities and control building (approximately 10m height).

The open cycle gas turbine draws in cool filtered air, through a compressor, where it is mixed with natural gas and injected at high pressure into the combustion chamber of the gas turbine for combustion. The hot exhaust gas is used to drive the turbine which connected to the electrical generator produces electricity. The exhaust gases are vented to the atmosphere through the stacks.

The Stage 2 combined cycle facility would require the addition of a heat recovery steam generator (HRSG), steam turbine, generator and an air cooled condenser. The HRSG acts to recover the heat energy previously emitted to atmosphere by the open cycle system by generating steam and producing electricity. Depending on the electricity demand growth, Delta Electricity may seek Minister's approval and progress with the construction and operation of combined cycle plant directly.

The transmission line required would be approximately 1200m in length as shown in **Figure 3**.

An indicative typical layout for Stage 2 is shown in **Figure 3**. The location of the Delta Electricity Facility within the site would be optimised as part of the Environmental Assessment process.

The supplier (and therefore the type) of the gas turbines would be selected through a competitive tender process as part of the overall Project procurement.

Section 2

Project Description

2.2.2 Associated infrastructure - Water and Wastewater

Several water and wastewater recovery systems are associated with the facilities. Service water is required for purposes including fire services, gas turbine wash down and domestic services. Demineralised water is also used the gas turbine cooling system. The quantity of demineralised water required for Stage 1 is relatively small and would be tankered in and stored on-site. For Stage 2 the amount of demineralised water would require on-site treatment facilities to supply the required volume of water. An assessment of water supply options would be carried out as part of a subsequent Environmental Assessment, when Stage 2 is pursued, and in consultation with relevant authorities.

Site runoff and any process water generated from the plant would be stored in on-site settlement dams prior to recycling or if appropriate, disposal.

2.3 EnergyAustralia's Gas Turbine Power Facility

The development of EnergyAustralia's gas turbine facility would comprise the following main elements:

- two gas turbine generators together with associated, ancillary equipment and water, fuel and control systems;
- roads, drainage, and a workshop, control and administration facilities; and
- external infrastructure connections associated with electricity import and export, gas supply, road access and telecommunications.

Construction would be undertaken in a single stage.

2.3.1 Gas Turbine Facility

The proposed gas turbine facility for EnergyAustralia would comprise two open cycle gas turbines. Each turbine could have a capacity in the order of 175MW, producing a total nominal facility output of 350MW. Except for emergencies as allowed in its operating licence, the facility would operate on an as-required, intermittent basis.

The main components of the facility would be:

- two open cycle gas turbine units, each comprising compressor, combustion (featuring dry low NOx burners) and turbine stages housed in sound attenuating enclosures approximately 8m high;
- air inlet structures and ducting for each unit, approximately 24m high;
- gas turbine exhaust stacks for each unit, up to 35m high;
- water receiving, treatment and storage facilities;
- waste water storage and treatment facilities;
- workshop, electrical, control and administration facilities;
- monitoring and controls systems associated with fuel, water, waste, fire fighting and all other primary and ancillary systems;
- "step-up" transformers and HV switchyard for exporting electricity to the 330kV transmission grid;
- a "gas receiving station" associated with gas supply, pre-conditioning and metering; and
- external infrastructure interfaces associated with back-up electricity supplies, road access and telecommunications.

The transmission line from the EnergyAustralia facility to the TransGrid 330kV substation would be approximately 1200m in length as shown in the indicative layout provided in **Figure 3**.

Section 2

Project Description

2.3.2 Associated infrastructure - Water and Wastewater

Wastewater volumes would be estimated and management strategies would be developed to maintain a zero discharge from the site except as part of the natural surface flows.

For the EnergyAustralia development, it is proposed that rainwater and stormwater captured on the site would be used as much as practicable. Subject to detailed design investigations, it is intended that harvested site stormwater and treated effluent from the Goulburn Sewage Treatment Plant (STP) (trucked to site) would be treated and recycled for use at the site as the primary sources of "raw water" for process and other water needs.

The water treatment plant would be the main wastewater source together with waste from the air inlet evaporative cooling system when it is in operation during the summer months. This wastewater would be stored in an on-site wastewater storage pond before being trucked offsite to the Goulburn Sewage Treatment Plant or other suitable approved receptor.

"Black" wastewater (ablutions and compatible contaminated wastewater) would be treated in a proprietary septic-type system and periodically disposed of off-site by a licensed contractor. Incompatible contaminated "black" wastewater would be drained to an on-site wastewater storage pond.

2.4 Joint/Shared Infrastructure

The following infrastructure would be required to serve both facilities:

- the gas pipeline lateral from the main Moomba to Sydney Pipeline, but excluding respective gas receiving delivery stations at the respective facilities;
- the high voltage transmission lines and connection to TransGrid;
- back-up electrical supply arrangements;
- external telecommunications connections; and
- a common access road to each facility for construction and operational purposes.

2.4.1 Gas Delivery Pipeline

As described previously, both facilities would be fuelled by natural gas.

Natural gas would be supplied from the existing Moomba to Sydney gas pipeline. The operating pressure of the existing mainline is typically in the range of 4,400 to 5,000 kPA. The pipeline is located to the south of site, as shown in **Figure 2**.

At this stage, the location of the connection to the mainline and the preferred route for the gas delivery pipeline has not been determined. However, the corridor for the pipeline route is included as part of this Preliminary Environmental Assessment. Delta Electricity and EnergyAustralia requests that the Minister approve the Concept Plan Application for the pipeline corridor and determine that further assessment to decide the preferred location for the gas main connection and the pipeline routes would be assessed under the EP&A Act 1979, when all route options have been considered and easements negotiated. There are no specific constraints on the location of the connection point of the lateral to the Moomba to Sydney Pipeline.

The local landholders who may be affected by the gas delivery pipeline corridor would be contacted as part of the consultation process. The Proponents would enter negotiations for an easement for the gas pipeline across the relevant properties.

Section 2

Project Description

2.4.2 Access Road

An access road from Canyonleigh Road is proposed into the site initially through an easement over the adjoining property utilising current property access and then turning west into the site.

The proposed access is shown on **Figure 3**.

2.4.3 Transmission Lines

Both facilities will require high voltage transmission lines. The exact design and layout of the high voltage transmission lines will be determined at the detailed design stage, however it is envisaged that the connection to TransGrid will be a direct line, which runs north-south, from the southern boundary of the site.

2.5 Project Cost Estimate

The total estimated capital cost for the Marulan Gas Turbine Facilities Project is \$809 million. The breakdown between the two Proponents' facilities and joint works is:

- Delta Electricity estimates that the total estimated capital cost (Stage 1 and 2) of its project is \$515 million
- EnergyAustralia estimates that the total estimated capital cost of its project is \$266 million
- The joint common works (site preparation, access road and gas pipeline) for the two facilities were estimated by Delta Electricity and EnergyAustralia to be \$28 million.

The cost breakdown is presented in Table 2-1.

Table 2-1 Estimated Capital Cost Breakdown

Component	EnergyAustralia	Delta Electricity (Stage 1 and Stage 2)
	\$ million	
Common Works		
Site preparation		4
Transmission Lines		6
Gas pipeline		12
Access road		6
SUB TOTAL		28
Cost split	14	14
Gas turbine facilities	266	515
TOTAL - Each Proponent	280	529
TOTAL - Whole Project	809	

Section 2

Project Description

2.6 Project Employment

2.6.1 Delta Electricity's Facility

The anticipated employment generated during construction and operation of Delta Electricity's facility is presented in Table 2-2. The employment levels during construction are shown as a proportion of full time jobs over a full year.

Table 2-2 Estimated Employment Generated - Delta Electricity's Facility

Phase	Employment Generation	
	Annual Full Time Equivalent - Maximum	Annual Full Time Equivalent - Average
Construction		
Stage 1	150 construction jobs.	50 – 60 at any one time
Stage 2	200 construction jobs	100 at any one time
Operation		
Stage 1	2 full time local staff : Up to 8 full time staff most located off-site: Up to 2 full time equivalent contract staff for various support services	
Stage 2	18 full time most located on-site. Up to 2 full time equivalent contract staff for various support services.	
Scheduled maintenance	20 to 50 contractors for a period of approximately 2 months every 2 to 3 years	

2.6.2 EnergyAustralia Facility

The anticipated employment generated during construction and operation of EnergyAustralia's Facility the project is presented in Table 2-3. The employment levels during construction are shown as a proportion of full time jobs over a full year.

Table 2-3 Estimated Employment Generated – Energy Australia's Facility

Phase	Employment Generation	
	Annual Full Time Equivalent - Maximum	Annual Full Time Equivalent -Average
Construction		
	150 construction jobs.	50 – 60 at any one time
Operation		
	2 full time local staff : Up to 8 full time staff most located off-site (approximate 2 full tie equivalent): Up to 2 full time equivalent contract staff for various support services	
Scheduled maintenance Minor Inspection	4 to 5 contractors for a period of 4-5 days every 6 to 7 years	
Major Scheduled maintenance:	40 personnel for a period of approximately 35-40 days every 36,000 equivalent operating hours for each unit	

Section 2

Project Description

2.6.3 Joint works

The employment numbers for each facility generally include joint construction works such as the earthworks, access road and transmission line. The construction numbers for the gas pipeline have not been determined at this point.

2.7 Project Timetable

At this time the expected sequencing of the construction of the two Proponent's facilities is that EnergyAustralia would progress before Delta Electricity. Key project dates are listed in the table below.

Item	Date (<i>tentative</i>)
Part 3A Concept Plan Application	December 2007
Environmental Assessments lodged with DoP for exhibition.	March 2008
EnergyAustralia commences construction	July 2008*
Delta Electricity commences construction	2011/12 Actual timing to be determined (depending on electricity demand growth and other developments)
EnergyAustralia Operation	June 2010
Delta Electricity Stage 1 or Stage 2 Operation	2013/14 (latest date dependent on electricity demand and other developments)

- Date assumes Conditions of Approval granted by the Minister for Planning by June 2008

Section 3

Planning and Legislative Provisions

3.1 Introduction

This section details the statutory requirements of the proposed facilities at Commonwealth, State and Local legislative levels.

3.2 NSW State Legislation

3.2.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) and its supporting Regulation, the *Environmental Planning and Assessment (EP&A) Regulation 2000*, provide the framework for the assessment and approval of proposed developments within NSW. Assessment provisions are provided in three parts of the EP&A Act, Part 3A, Part 4 and Part 5.

The proposed development for the purpose of gas fired power stations falls under the provisions of Part 3A of the EP&A Act. Part 3A of the EP&A Act provides a process for the assessment of developments, which are considered to be “Major Projects” as declared by State Environmental Planning Policy 2005 (SEPP) Major Projects or by order of the Minister in the Government Gazette.

The proposed works comprise gas fired electricity generation and would have a capital investment of over \$30 million dollars and therefore the proposal is considered a Major Project by virtue of Clause 24(a) of Schedule 1 of SEPP Major Projects.

Delta Electricity carried out preliminary consultation with Department of Planning (DoP) during November 2005 with regards to its proposed development. DoP advised Delta Electricity in a letter dated 24 April 2006 that its proposed development is declared to be a project to which Part 3A of the EP&A Act 1979 applies for the purpose of section 75B of the Act.

More recently however, consultation with the DoP was undertaken for combining two separate gas turbine facilities on a site located near Marulan. The Minister has determined, under clause 6 of the State Environmental Planning Policy (Major Projects) 2005, that the proposed development is development of a kind described in Schedule 1 to that SEPP.

This Preliminary Environmental Assessment report and the associated Concept Plan Application are submitted jointly by Delta Electricity and EnergyAustralia under Part 3A of the EP&A Act for the assessment of the two separate facilities at the Marulan site and the gas pipeline and other shared infrastructure.

3.2.2 Environmental Planning and Assessment Regulations 2000

Clause 8F of the *Environmental Planning and Assessment Regulation 2000* (EP&A Reg) describes the conditions under which owner’s consent is required for applications made under Part 3A of the EP&A Act.

Clause 8F states that:

“(1) The consent of the owner of land on which a project is to be carried out is required for a project application unless:

(a) the application is made by a public authority.”

Clause 8F further states that:

“(3) If the consent of the owner of the land is not required under this clause, then the proponent is required to give notice of the application:

*(a) in the case of a linear infrastructure project or a project designated under subclause (1) (e)—
to the public by advertisement published in a newspaper circulating in the area of the project
before the start of the public consultation period for the project, or*

Section 3

Planning and Legislative Provisions

(d) in any other case—to the owner of the land at any time before the application is made..”

These concept plan application and project applications are being made on behalf of EnergyAustralia and Delta Electricity that are both public authorities. Accordingly, in respect of the land on which the two facilities will be constructed, the consent of the owner may be obtained any time prior to the determination of the application. Delta Electricity and EnergyAustralia are currently in the process of purchasing the land from the current land owner such that Delta Electricity and EnergyAustralia may own the land prior to determination of the applications. If not, the owner's consent will be obtained.

The land identified for the gas pipeline corridor, as well as transmission lines and access roads, are considered to fall under the definition of *linear infrastructure project* in clause 8F of the *EP&A Reg*. Delta Electricity and EnergyAustralia are aware that clause 8F of the Regulation requires public notification by advertisement published in a newspaper circulating in the area of the project before the start of the public consultation period. Delta Electricity and EnergyAustralia would ensure that the necessary advertisements are placed in relevant newspapers before exhibition of the Environmental Assessments.

3.2.3 Other Acts

While the EP&A Act provides the framework for the planning and development approvals system within NSW, there are several other Acts and Regulations which must be considered. While the Integrated Development provisions do not apply to Part 3A projects, the provisions of these Acts still need consideration in the preparation of the Environmental Assessments.

Relevant Acts include:

- **Protection of the Environment Operations Act 1997:** The Protection of the Environment Operations (POEO) Act 1997 relates to pollution and waste disposal in NSW and provides for the licensing of certain types of pollution caused by development or operation of developments. It is anticipated that the proposed facilities would require licensing under the provisions of the POEO Act. In order to ensure that the proposed development is designed and approved in accordance with the requirements of the POEO Act, Delta Electricity and EnergyAustralia understand that DoP would forward this Preliminary Environmental Assessment report to the Department of Environment and Climate Change (DECC) for comment.
- **Water Management Act 2000:** provides for the protection of river and lakeside land in NSW, formerly held under the River and Foreshore Improvements Act 1948 for areas covered by a Water Sharing Plan. The proposed site is located approximately 150m from the Wollondilly River. Under the WM Act it is necessary to consider any development within 40 metres of any watercourse onsite, and DoP and the Department of Natural Resources would need to consider this in the preparation of the Major Project Environmental Assessment for the final option.
- **Threatened Species Conservation Act 1995:** provides for the conservation of threatened species, populations and ecological communities of animals and plants. It provides a framework for the assessment of any action that may impact on threatened species.
- **Heritage Act 1975:** provides for the protection of items of local, regional and State heritage significance. It contains a list of State Heritage Items and outlines processes assessment of development which may impact items of heritage significance.
- **Native Vegetation Act 2003:** provides for the conservation of native vegetation through the prevention of inappropriate clearing and promotion of rehabilitation practices. For developments being considered under Part 3A (s75U(e)) of the Environment Planning and Assessment Act, section 12 the Native Vegetation Act does not apply.

Section 3**Planning and Legislative Provisions**

- **The Roads Act 1993:** Section 138 of the Roads Act 1993 requires consent for certain action in relation to public and classified roads including disturbing the surface of a public road. The Proponents propose to construct a gas pipeline across Canyonleigh Road, which would require works to be undertaken to the road. A permit would therefore be required under the Roads Act to disturb the surface of a public road.
- Preliminary investigations have indicated that licences/approvals may also be required under the Occupational Health & Safety Regulation 2001, Electricity Supply Act 1995, Pipelines Act 1967. These would be assessed fully in the Environmental Assessments.
- **National Parks and Wildlife Act** – provides for the preservation of land and the protection of that land, as well as the protection of flora and fauna and Aboriginal heritage. For approved projects under Part 3A (s75U(d)) of the Environment Planning and Assessment Act, a permit under section 87 or a consent under section 90 does not apply.

3.2.4 State Environmental Planning Policies

State Environmental Planning Policies (SEPPs) are planning instruments under the EP&A Act that address more specific planning matters, where it is not considered appropriate for the Act to provide the detail.

State Environmental Planning Policy (SEPP) – Major Projects (2005)

According to SEPP Major Projects, development referred to as a ‘Major Project’ requires assessment and approval of the Minister for Planning in accordance with Part 3A of the EP&A Act. The SEPP defines certain types of development as comprising major projects.

The proposed gas fired power stations constitute a Major Project under the provisions of Schedule 1 of the Major Projects SEPP pursuant to clause 24(a). Clause 24 Electricity Generation provides that a major project is development:

“for the purpose of a facility for the generation of electricity or heat or their co-generation (using any energy source, including gas, coal, bio-fuel, distillate and waste and hydro, wave, solar or wind power), being development that:

(a) has a capital investment value of more than \$30 million, or

(b) has a capital investment value of more than \$5 million and is located in an environmentally sensitive area of State significance.”

The total estimated capital cost for the whole development (both Delta Electricity’s proposal EnergyAustralia’s proposal) is \$809 million. The proposed development is therefore considered to be defined within Schedule 1 of the SEPP Major Project as a Part 3A Major Project.

Consultation with the DoP was undertaken for combining two separate gas turbine facilities on a site located near Marulan. Subsequent to this a request has been made to DoP to arrange the Minister for Planning to form an opinion under clause 6 of the State Environmental Planning Policy (Major Projects) 2005 that the proposed development is development of a kind described in Schedule 1 to that SEPP.

The accompanying Concept Plan Application is submitted jointly by Delta Electricity and EnergyAustralia under Part 3A of the EP&A Act 1979 for the assessment of the two separate Gas Turbine facilities at the Marulan site.

Accordingly, the proposed development is subject to assessment by the Director General of DoP and determination by the Minister for Planning in accordance with Part 3A of the EP&A Act.

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Planning and Legislative Provisions

State Environmental Planning Policy (SEPP) 33 – Hazardous and Offensive Development

This applies to development for the purpose of potentially hazardous industries, and potentially offensive industries. The proposed development would constitute a potentially hazardous and offensive industry as defined under clauses 3 and 4 of SEPP 33.

As SEPP 33 would apply the Minister must consider the proposal within the context of its compliance with current circulars and or guidelines published by the DoP and Australian Standard relating to hazardous or offensive development.

3.2.5 Regional Environmental Plans

Drinking Water Catchments Regional Environmental Plan No. 1

The Regional Environmental Plan addresses the environmental, social and economic future of the catchments that supply drinking water to Sydney, Blue Mountains and the Illawarra extend over 16 000 square kilometres of land. The plan commenced on 1 January 2007 and repealed State Environmental Planning Policy 58 - Protecting Sydney's Water Supply.

As the project is proposed to be assessed under Part 3A of the EP&A Act, this REP does not strictly apply to the development however the site is located within the Sydney Water Drinking Catchment to which the plan applies. The plan aims:

- (a) *to create healthy water catchments that will deliver high quality water while sustaining diverse and prosperous communities, and*
- (b) *to provide the statutory components in Sustaining the Catchments that, together with the non-statutory components in Sustaining the Catchments, will achieve the aim set out in paragraph (a), and*
- (c) *to achieve the water quality management goals of:*
 - (i) *improving water quality in degraded areas and critical locations where water quality is not suitable for the relevant environmental values, and*
 - (ii) *maintaining or improving water quality where it is currently suitable for the relevant environmental values.*

An assessment of these aims and the manner in which the proposal satisfies them would be undertaken as part of the Environmental Assessment.

3.3 Commonwealth Legislative Requirements

Under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*, approval from the Commonwealth Minister for the Environment, Water, Heritage and the Arts is required for an action that is:

- Likely to have a significant impact on a "matter of national environmental significance";
- Carried out on Commonwealth land and is likely to have a significant impact on the environment;
- Carried out outside of the Commonwealth land and is likely to have a significant impact on the environment on Commonwealth land; or
- Carried out by the Commonwealth government.

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The EPBC Act provides for the establishment of Bilateral Agreements between the Commonwealth and a State or Territory to accredit existing development assessment and approval processes. Such a bilateral agreement was made between the NSW Government and the Commonwealth in January 2007 to cover the assessment components of development/activity related proposals under Parts 3A, 4 and 5 of the EP&A Act.

3.3.1 Matters of National Environmental Significance

The EPBC Act identifies seven matters of National Environmental Significance (NES):

- Act World Heritage properties
- National heritage places
- Wetlands of international importance (Ramsar wetlands)
- Threatened species and ecological communities
- Migratory species
- Commonwealth marine areas
- Nuclear actions (including uranium mining)

A search of the EPBC Act Protected Matters database has revealed that the site is not located within a World Heritage area, a Commonwealth marine environment, nor does the proposed development involve nuclear activities. The preliminary review of the database revealed that threatened ecological communities, threatened species, migratory species may occur on the site. The assessment carried out to date indicates that the Project is unlikely to result in any significant effect on any matters of NES listed under the EPBC Act. Hence it is unlikely that the proposal would be considered a controlled action and referral to the Commonwealth Department of the Environment, Water, Heritage and the Arts is therefore not considered necessary at this stage. However, consultation with, and referral to, the Commonwealth is a matter Delta Electricity and EnergyAustralia will give further consideration once relevant reports are finalised.

3.4 Local Legislation

3.4.1 Mulwaree Local Environmental Plan 1995

Planning Certificates issued under Section 149 (2) and (5) of the Environmental Planning and Assessment Act 1979 for the site state that Upper Lachlan Shire Council is the local government authority and the site is Zoned General Rural 1(a) under the Mulwaree Local Environment Plan 1995 (MLEP).

Under MLEP 1995 the site is zoned 1(a) General Rural and the proposed development is permissible subject to the granting of consent by the relevant consent authority. However, section 75R(3) of the EP&A Act provides that environmental planning instruments (other than State environmental planning policies) do not apply to or in respect of an *approved* project.

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Preliminary Environmental Assessment

4.1 Introduction

The following sections discuss the extent of potential impacts that could be expected from the proposed gas turbine facilities, gas pipeline and other shared infrastructure. Potential impacts have been identified through review of previous studies carried out for the site as well as through the undertaking of additional desktop studies where required to augment the reviews undertaken to date.

The following environmental aspects have been identified:

- flooding, surface water and hydrological;
- air quality;
- noise;
- flora and fauna (including threatened species and communities);
- visual and landscaping;
- heritage and archaeology;
- hazard and risk;
- traffic and transportation;
- environmental and community context (land ownership); and
- cumulative impacts.

It is noted that an assessment of the above aspects would be undertaken for each of the proposed facilities as well as an assessment of the cumulative impact of both facilities.

Delta Electricity and EnergyAustralia seek Concept Plan Approval for two separate gas turbine facilities and associated shared infrastructure including access roads, the high voltage transmission grid connections and the gas pipeline. The Applications for Project Approval seek Project Approval for EnergyAustralia's facility and Project Approval for Stage 1 of the Delta Electricity facility. Further project applications, including assessment under another part of the EPA Act, would be sought for those elements only approved at Concept Approval level, such as the gas pipeline and Stage 2 of the Delta Electricity facility.

4.2 Key Aspects

4.2.1 Flooding, Surface Water and Hydrology

Water management issues would be addressed as part of the Environmental Assessment.

The Marulan Site is located adjacent to the Wollondilly River. The topography rises from the Wollondilly River to a low ridgeline running in a rough north-south direction, rising more prominently in the south-eastern corner of the site. Several drainage lines and small creeks traverse the site all draining into the Wollondilly River. There some small dams on the site.

During the construction and operation of the Delta Electricity (both stages) and EnergyAustralia developments, surface water runoff would have the potential to impact surrounding water bodies. A detailed assessment of potential water quality and flooding issues is being carried out for the site. Consultation would be carried out with the Sydney Catchment Authority and Department of Water and

Section 4

Preliminary Environmental Assessment

Energy to ensure that the proposed development complied with relevant guidelines and legislation. Mitigation measures would be recommended to address any potential impacts identified on surrounding water bodies.

Flooding is also a potential issue at the site and based on preliminary modelling, a bench height above the expected 1:100 flood level is currently being assessed and an appropriate level will be determined.

4.2.2 Air Quality

Gas fired power stations emit the products of combustion through an exhaust stack. The emissions from the plant are relatively minor concern with respect to the range of significant pollutants.

Other pollutants that would be addressed in the air quality assessment are carbon monoxide (CO), volatile organic compounds (VOC) and particulate matter. An assessment would be carried out as part of the Environmental Assessments to model the dispersion of emissions from each of Stage 1 and 2 of the Delta Electricity facility and EnergyAustralia's facility as well as the cumulative impact of the two facilities.

Gas turbine power stations generally have lower greenhouse intensity than conventional coal fired power stations. The Environmental Assessments would consider the potential greenhouse emissions generated by each facility as well as the cumulative impact from both facilities and compare these to average emission intensity for electricity generation in NSW.

4.2.3 Noise

The sound generated by the Delta Electricity facility (Stage 1 and 2) and EnergyAustralia's facility as well as the cumulative impact of the two facilities would have the potential to affect nearby receivers, if unmitigated. **Figure 4** presents the locations of nearest sensitive receivers.

A detailed noise and vibration assessment would be included as part of the Environmental Assessment for the site. The assessment would identify appropriate mitigation to ensure that relevant noise guidelines are met.

4.2.4 Flora and Fauna (including threatened species and communities)

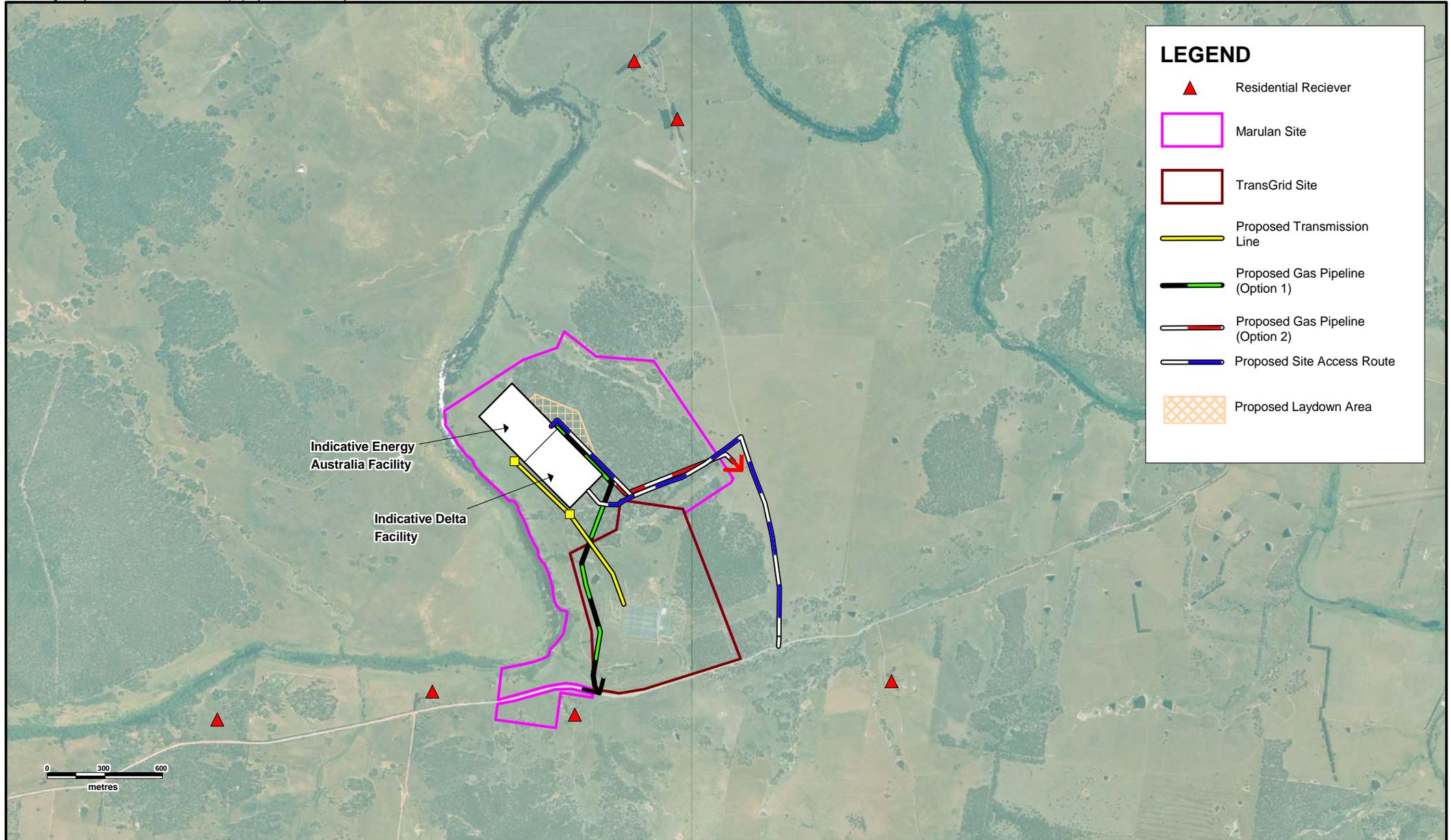
The Marulan site contains a mosaic of cleared pasture, native woodlands and riparian and aquatic ecosystems that are associated with the Wollondilly River. Tableland Grassy Woodland has also been identified on the site.

An assessment of the flora and fauna communities is being carried out as part of the Environmental Assessment. This would also include desktop survey of the gas pipeline corridor. Mitigation measures would be recommended so as to prevent any significant potential impacts.

4.2.5 Visual and Landscaping

The development of two separate gas turbine facilities in the existing rural landscape may reduce the visual amenity of the area. The site is located in a predominantly rural farming area although the site has been affected by the industrial development of the TransGrid substation and transmission towers.

There are nine properties which could potentially have views of the gas turbine exhaust stacks at the Marulan Site. However, generally visual issues from rural residential properties to the south and south west of the site could be partially mitigated by screen buffer planting. Tree planting could be undertaken to reinforce existing vegetation along the river bank. It is noted that many of the properties surrounding the Marulan site are currently impacted by views of the TransGrid substation facility.



LEGEND

- ▲ Residential Reciever
- Marulan Site
- TransGrid Site
- Proposed Transmission Line
- Proposed Gas Pipeline (Option 1)
- Proposed Gas Pipeline (Option 2)
- Proposed Site Access Route
- Proposed Laydown Area

Indicative Energy Australia Facility

Indicative Delta Facility



Source: Delta Electricity, EnergyAustralia, Southern Cross Consulting Surveyors

Client
**DELTA ELECTRICITY
 AND ENERGY AUSTRALIA**



Project
**PRELIMINARY ENVIRONMENTAL
 ASSESSMENT**

Drawn: AJW	Approved: NB	Date: 19.12.2007
Job No: 43177371		File No: 43177371-108.wor

Title
**LOCATION OF RESIDENTIAL
 RECIEVERS**

Figure: **4**

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A detailed assessment of the potential visual impacts from the preferred site would be carried out as part of the Environmental Assessment. Mitigation measures such as screening and planting would be recommended as appropriate. The visual assessment would address the visual impact of each facility as well as the cumulative impact of both facilities.

4.2.6 Heritage and Archaeology

There is potential for items of Aboriginal significance to exist at the site due to the nature of the topography of the site and the proximity to the Wollondilly River. It is noted that the site has a history of clearing and grazing.

A detailed assessment would be carried out as part of the Environmental Assessment to identify all recorded and potential Indigenous and non-Indigenous archaeological material and heritage values within the study area, to assess the significance of sites and heritage places, and to provide mitigation measures that would assist in conserving the local Indigenous and non-Indigenous heritage. This would also include desktop survey of the gas pipeline corridor. Detailed mitigation and management recommendations would be provided to ensure address any potential significant impacts.

4.2.7 Hazard and Risk

Consideration would be given to the hazards and risks associated with the construction and operation of the gas turbine power stations and gas connection from the Moomba to Sydney Pipeline lateral to the Marulan Site.

A preliminary hazard analysis (PHA) would be undertaken as part of the Environmental Assessment, in accordance with the requirements of SEPP 33. The PHA would address the potential hazard and risk for each facility as well as the cumulative impact of the two facilities.

4.2.8 Traffic and Transportation

An assessment of the potential traffic generated by the construction and operation of the development would be carried out as part of the Environmental Assessment. This assessment would address the cumulative operational traffic impact for both facilities.

The construction traffic assessment would also address the impact of potential sequencing scenarios of one facility being constructed before the other, or the two constructed simultaneously, or consecutively. Once the potential impacts from the development on the local road network are understood, appropriate mitigation measures would be suggested to address these impacts.

4.2.9 Cumulative Impacts

As noted in the relevant environmental aspects above, the assessments would address the cumulative impact of the construction and operation of the two facilities. The environmental aspects would require cumulative assessment:

- air quality;
- noise;
- visual and landscaping;
- flora and fauna;
- hazard and risk;

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Preliminary Environmental Assessment

- socio-economic;
- flooding and hydrology; and
- traffic and access.

4.3 Community Consultation

The proposed development site is located within the communities of Marulan and Brayton. The site is located adjacent to a number of landowners with generally large landholdings. The land usage of these areas is mixed, with some landowners being permanent residents while others use their properties as holiday homes.

4.3.1 Consultation to Date

Previously, Delta Electricity, with assistance from URS, carried out a number of consultation activities. To date this included one-on-one meetings with neighbours surrounding the site, advertising in the local press and setting up a telephone information line and email address. A summary of consultation activities conducted to date is provided in Table 4-1.

Table 4-1 Summary of Consultation Activities to date by Delta Electricity

Consultation Activities	Relevant Dates
Telephone information line operational	Feb 06 – current
Email address operational	Feb 06 – current
Marulan Magazine Advertisement	Mar 06
Goulburn Post Advertisement	Feb 06
Marulan Magazine Article	April 06
One-on-one meetings	April 06
Newsletter 1 Distributed	June 06

From the initial consultation, it is noted that residents value the rural setting of the area and the undisturbed character of the locality. Consequently, consultation about the proposed development would reflect the feed back of the residents that the development could influence the lifestyle within the area. Aspects which have been raised to date include:

- visual impact on surrounding properties;
- noise impact on surrounding properties;
- air quality impact on surrounding properties;
- impact on surrounding property values;
- a perception of human health risk including electromagnetic radiation;
- impacts on local flora and fauna;
- impacts on soils and potential erosion;
- bushfire safety; and
- impact on local water courses.

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4.3.2 Consultation to date related to Delta Electricity and EnergyAustralia

Consultation has been carried out by way of initial discussions with DoP and local council representatives. Recently a consultation letter has been sent to relevant Marulan community members advising that Delta and EnergyAustralia are considering two separate facilities at the site.

4.3.3 Future Consultation

A detailed consultation plan addressing both Delta Electricity's and EnergyAustralia's proposals are being developed.

Future consultation activities include further one-on-one meetings, advertisements, newsletters and consultation with government and community stakeholders.

Outcomes from these activities would be incorporated into the respective Environmental Assessments for each Proponent.

Section 5

Conclusion

This Preliminary Environmental Assessment addresses the proposed development of two separate gas turbine facilities at a site located near Marulan, NSW by Delta Electricity and EnergyAustralia, together with associated infrastructure including the high voltage transmission grid connections and the gas pipeline and other shared infrastructure.

Delta Electricity is proposing a two staged process of construction and operation. Proposed Stage 1 is two open cycle gas turbines operating in a peaking role and Stage 2 is conversion to combined cycle. Depending on the electricity demand growth, Delta Electricity may seek Minister's approval and progress with the construction and operation of combined cycle plant directly.

EnergyAustralia is proposing construction in a single stage and operation of two open cycle gas turbines in a peaking role. Except for emergencies as allowed in its operating licence, the facility would operate on an as-required, intermittent basis for a total maximum period of up to 10% of any year.

Subject to obtaining the Environmental Assessment Requirements in accordance with section 75F of the EP&A Act, Environmental Assessments addressing the environmental impacts of the respective facilities and associated infrastructure would be prepared addressing the effects associated with each facility, as well as the cumulative impact of the two facilities in terms of construction and operation aspects at the site located near Marulan.