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Overview

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.

Based on the forecasts provided in the *2007 National Electricity Market Management Company Statement of Opportunities* and Delta Electricity and EnergyAustralia's own analysis of current market conditions and potential future demand scenarios, there is a need to provide additional generating capacity to meet the likely short to medium-term shortfall in electrical supply during peak demand periods.

Delta Electricity and EnergyAustralia are proposing to construct and operate two separate gas turbine facilities at a site hereinafter referred to as the 'Marulan Site' located approximately 12 km north of Marulan and 25 km east of Goulburn.

The proposed Delta Electricity Gas Turbine Facility would be developed in two stages. Stage 1 consists of two open cycle gas turbines with a total capacity in the range of 250 to 350 megawatts (MW). Each turbine could have a capacity in the order of 125 to 175 MW depending on the final equipment selected. Stage 2 involves the conversion of the open cycle facility to a 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. Depending on future electricity demand and other generation projects, Delta Electricity could implement the combined cycle plant directly.

The proposed EnergyAustralia Gas Turbine Facility would be developed in a single stage. This would consist of two open cycle gas turbines with a total capacity of around 350 MW. Each turbine could have a capacity in the order of 175 MW depending on the final equipment selected.

The Delta Electricity Stage 1 Facility and the EnergyAustralia Facility would operate only during times of peak electricity demand. It is expected that the EnergyAustralia Facility would operate for approximately 10% of the year and the Delta Electricity Stage 1 Facility would operate for approximately 500 hours per year. The Delta Electricity Stage 2 Facility would operate at approximately 90% capacity.

The development also requires the following common infrastructure:

- access road;
- transmission line; and
- gas pipeline to connect to the Moomba to Sydney gas pipeline.

This Environmental Assessment, prepared jointly for Delta Electricity and EnergyAustralia under Part 3A of the *Environmental Planning and Assessment Act 1979*, is seeking *Concept Approval* for:

- Delta Electricity Stage 1 Facility;
- Delta Electricity Stage 2 Facility (progressed depending on electricity market demand);
- EnergyAustralia Facility;

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- shared infrastructure: access road and transmission line; and
- shared infrastructure: gas pipeline corridor.

The above components as a whole are referred to herein as the Marulan Gas Turbine Facilities.

It is noted that this Environmental Assessment is part of a suite of three documents. The other relevant documents are:

- Delta Electricity Marulan Gas Turbine Facility – Project Application seeking project approval for Stage 1 of its Facility and concept approval for Stage 2; and
- EnergyAustralia Marulan Gas Turbine Facility – Project Application seeking project approval for its Facility.

Project Need and Justification

The 2007 *NEMMCO Statement of Opportunities* predicts an annual NSW peak demand growth which will exceed existing generation capacity over the next decade. To meet the immediate growth in demand for electricity, a number of additional power plants would be required to provide peaking capacity in the order of 300 MW 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 Stage 1 Facility and EnergyAustralia Facility would contribute positively to the NSW electricity market by providing peaking plants to service demand and assisting with security of supply. If market demand requires, the Delta Electricity Stage 2 Facility would contribute positively to the NSW electricity market by providing base load generation which would also assist with security of supply, as base load generation provides for the bulk of National Electricity Market needs.

Although Delta Electricity and EnergyAustralia are independent corporations, both organisations recognised that the Marulan Site was a favourable location and co-locating the Facilities would reduce the environmental footprint.

Alternatives

A range of alternatives to the proposal have been considered by Delta Electricity and EnergyAustralia. Operation of gas turbines was found to be suitable in open cycle mode for meeting peak electricity demand and in combined cycle mode for meeting base load demand.

A number of different types of gas turbines are suited to this service duty including E Class, F Class, H Class and aeroderivative type turbines. For the purpose of this assessment, it is assumed that the Facilities would utilise E Class turbines.

Delta Electricity and EnergyAustralia considered a number of other sites in NSW. The Marulan Site was determined to be the preferred site due to proximity to existing infrastructure such as the TransGrid switchyard and Moomba to Sydney pipeline.

Consideration was given to the location of the separate Facility footprints within the Marulan Site to minimise the potential ecological impact as well as visual impact. Key factors included proximity to the Wollondilly River for water quality and flooding issues; potential visual catchment and visual backdrop; noise implications; potential flora and fauna issues; and extent of potential excavation required. Based on these considerations the footprints for both Facilities were located in the north-western part of the Marulan Site.

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The location of the gas pipeline between the Facilities and the Moomba to the Sydney gas pipeline has not been confirmed however a corridor has been identified for consideration. On the basis of a preliminary assessment conducted on the pipeline route to the Site, the preferred option for both sites is a direct connection from the pipeline to the Marulan Site. The advantages of this route over a route along Canyonleigh Road include a shorter pipeline length and hence lower cost; a more direct route minimising bends (as bends put additional pressure on the high pressure pipeline); avoiding laying pipeline within existing road corridors which can increase the risk of damage by third parties and maximises distance to local residences. An area east of the preferred route has also been identified for consideration based on minimal requirements for vegetation clearance and suitable topography.

A number of current and potential water sources, including potable, recycled and stormwater have been identified to provide water quantities which can meet and exceed the requirements of the proposed Facilities. The potential sources for water have been considered for the combined requirements of both the Delta Electricity and EnergyAustralia Facilities. Any of these water servicing options for each of the Facilities' water demands could be adopted in conjunction with the other options. A decision would be made on the preferred option or option mixes following appropriate assessment of economic and non-economic factors.

It is proposed that water would be trucked to the Site to meet the operational requirements for the EnergyAustralia Facility and Delta Electricity Facility as these water requirements are relatively low. A new pipeline may be considered to meet the combined operational needs for EnergyAustralia and Delta Electricity Stage 2 Facilities; however, the pipeline would be subject to further consultation, detailed design and approvals.

Planning Context

The Marulan Gas Turbine Facilities are subject to the development and assessment processes and requirements of Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). Delta Electricity and EnergyAustralia requested that the Marulan Gas Turbine Facilities be assessed under the provisions of Part 3A as a *Concept Application*. On 8 October 2007, the Director-General declared that the project was considered a Major Project to be assessed under the provisions of Part 3A.

The Minister for Planning has subsequently declared that projects such as the Marulan Gas Turbine Facilities are critical infrastructure under Section 75C of the EP&A Act as they are essential to the State for economic and social reasons, particularly in providing a secure electricity supply for NSW.

The Site of the proposed development is zoned under the Mulwaree Local Environmental Plan 1995. The Site is zoned 1(a) General Rural and the proposed development is permissible subject to the granting of consent.

This Environmental Assessment has been prepared in accordance with the Environmental Assessment Requirements issued by the Director-General of the Department of Planning for this Project.

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Consultation

A consultation strategy was developed to initiate and maintain open communication with key stakeholders and to provide a forum to proactively respond and work with key community and key statutory and public authority stakeholders. The consultation strategy was undertaken by representatives of Delta Electricity, EnergyAustralia and members of the URS team.

Delta Electricity and EnergyAustralia have engaged with the following key stakeholders:

- landholders immediately surrounding the proposed Facilities Site and natural gas pipeline corridor;
- the broader community through a press release in the Marulan Magazine and Goulburn Post;
- the Pejar Local Aboriginal Land Council and the Gundangarra Tribal Council Aboriginal Corporation;
- State Government agencies, specifically the Department of Planning, Department of Environment and Climate Change, Department of Water and Energy, TransGrid, Roads and Traffic Authority, NSW Rural Bushfire Service, the Department of Primary Industries, Sydney Catchment Authority;
- Commonwealth Civil Aviation Safety Authority; and
- Goulburn Mulwaree Council and Upper Lachlan Shire Council.

Exhibition of the Environmental Assessment will present an opportunity for stakeholders and the community to provide feedback on the Assessment. Delta Electricity and EnergyAustralia are committed to providing regular, accurate and up to date information about this proposed development.

Assessment of Impacts

This Environmental Assessment addresses the potential impact of the Facilities with respect to greenhouse gas, air quality, noise, soil and groundwater, traffic, biodiversity, cultural heritage, visual amenity, water management, hazards, bush fire, land use changes and socio economic factors. An overview of the outcomes of the assessment is presented below.

Greenhouse Gas Assessment

The use of natural gas for both the Delta Electricity and EnergyAustralia Facilities results in electricity production at a lower greenhouse intensity than the NSW average. Progression of the Delta Electricity Facility to combined cycle operation (i.e. Stage 2) further improves greenhouse efficiency to approximately half that of conventional coal-fired generation. For this reason, natural gas fired, combined cycle generation is widely considered to be an important transitional mode of generation for the achievement of long-term greenhouse reduction targets.

The greenhouse gas emission inventory for the Facilities was based on the methodology detailed in the *Greenhouse Gas Protocol* (WBC for SD&WRI, 2004) and addressed each of the Facilities and their combined impact. The assessment considered the operating scenarios and the scenario with the most intensive greenhouse gas emissions was found to be the combined Delta Electricity (Stage 2) and EnergyAustralia Facilities. Based on the upper limits of proposed operation, the assessment for this scenario estimated the release of approximately 2.3 million tonnes of carbon dioxide equivalent

(CO_2 -e), representing 3.96% of the emissions from electricity generation in NSW, or 1.18% of the emissions from electricity generation in Australia in 2005.

Both Delta Electricity and EnergyAustralia have Greenhouse Programs in place.

Air Quality

The study of the likely impact of the Marulan Gas Turbine Facilities on air quality covered the following components:

- local air quality; and
- aviation safety.

An assessment has been undertaken for the combined impact from both the Delta Electricity and EnergyAustralia Facilities.

An air quality assessment was undertaken in accordance with the *Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW* (NSW EPA, 2005). In accordance with these guidelines, the assessment considered a range of factors including local meteorology, background air quality, terrain, and operating scenarios to provide a conservative assessment of the likely air quality impacts of the proposal.

Due to the different operational scenarios for each of the Delta Electricity (both stages) and EnergyAustralia Facilities and the varying emission characteristics, several scenarios were required to be modelled. The assessment also conservatively modelled the Facilities operating all hours of the year to determine the worst case concentrations of emissions in a range of meteorological conditions over the year modelled.

The air quality assessment adds the conservative assessment of emissions from the dispersion modelling for nitrogen dioxide, particulate matter, carbon monoxide and sulphur dioxide to the existing background concentration of these modelled emission species and then compares them to the DECC criteria.

All modelled emission species, for the suite of the scenarios modelled, were below the DECC regulatory criteria.

In accordance with the *Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW,* as no exceedances of DECC regulatory criteria were observed, it is considered that the impacts on air quality from this development would be minor and adverse impacts are unlikely.

A plume rise assessment / aviation safety study was also performed on the emissions from both Facilities operating as peaking facilities (being the worst case scenario). The assessment was conservative with respect to the modelled operating times and operating conditions and concluded that consideration would be given for the Facility to be designated a potential hazard to aircraft operators in the area. The implementation of such designation would be at the discretion of the Civil Aviation Safety Authority.

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Noise

The construction and operational noise, traffic noise and vibration impacts from the Project were assessed in accordance with the following policy guidelines published by the DECC:

- *NSW Industrial Noise Policy* (INP);
- *Environmental Criteria for Road Traffic Noise* (ECRTN); and
- *Environmental Noise Control Manual* (ENCM).

The noise assessment involved measuring and determining existing background and ambient noise levels, predicting the noise levels produced by the Facilities having regard to meteorological effects (such as wind and temperature inversions), and comparing the predicted level with the project-specific noise levels and assessing the impacts. Where project-specific noise levels are exceeded, feasible and reasonable noise mitigation strategies are considered.

Feasible and reasonable noise control measures have been considered for both Facilities and are included in the proposal. The Delta Electricity Stage 1 Facility and EnergyAustralia Facility would have inherent noise mitigation measures incorporated such as air intake silencers, generator transformer walls on three sides and exhaust air silencers. The Delta Electricity Stage 2 Facility would be designed to meet the noise goals and could incorporate various mitigation measures. In this assessment, mitigation measures such as a heat recovery steam generator, which has a reduced sound power level and low noise condenser fans with screens and silencers, were assumed in the modeling.

Notwithstanding the measures considered above for both Facilities, the assessment of operational noise concluded that two neighbouring residential dwellings are predicted to have 10^{th} percentile noise levels that exceed 40 dBA. One neighbouring residential dwelling is predicted to have a marginal exceedance. Delta Electricity and EnergyAustralia have entered into negotiations with these residences to address the noise impacts.

The potential for sleep disturbance from the operation of the Facilities was found to be negligible.

Noise impacts due to extra traffic for the Marulan Site along Canyonleigh Road (both during construction and operation) were found to be negligible.

A preliminary assessment of noise during the construction phase shows general compliance with the construction noise criteria. These levels would be confirmed once the construction contractors are appointed and the final composition of the construction fleet is confirmed. A Construction Noise Management Plan would be developed to ensure that appropriate noise levels are met.

No vibration impacts are envisaged to occur at the residential receivers.

Soils and Groundwater

The proposed mitigation measures and safeguards would ensure that soils and groundwater are managed using appropriate design, construction and management procedures. Accordingly, any impacts on soils and groundwater resulting from the construction and operation of the proposed Delta Electricity and EnergyAustralia Facilities and associated infrastructure including transmission lines, an access road and gas pipeline are expected to be low.

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Traffic and Transport

The assessment of the traffic impacts was conducted for the following Project components:

- impact of Common Shared Works being the:
  - bulk earthworks for preparation of the pads for the two Facilities;
  - construction of an access road into the Site from Canyonleigh Road;
- impact of construction of the Facilities (beyond earthworks) assuming a worst case scenario for construction; and
- cumulative impact of operation of the Facilities.

Construction of the two Facilities either simultaneously or consecutively represents different scenarios with respect to traffic. For this study, two scenarios were adopted: Scenario 1 where both Facilities are constructed at the same time and Scenario 2 where there is a time lag between completion of the EnergyAustralia Facility and the commencement of Stage 1 of the Delta Electricity Facility.

The assessment concluded that the peak traffic during construction would be approximately 64% higher than without the development for the worst case, Scenario 1, where the two Facilities are constructed at the same time. In peak periods, acceptable levels of service are maintained along Canyonleigh and Brayton Roads during these periods.

In a normal operations year, operations for both Facilities would increase the vehicle movements on local roads by 10%. During a maintenance year, vehicle movements will increase by around 18% for the six week maintenance period.

The mitigation measures for traffic impacts to be implemented include the following:

- Further assessments would:
  - review what works may be required to bridges, causeways, traffic islands, intersections and drainage culverts along Canyonleigh and Brayton Roads to facilitate the construction and operation of the Facilities; and
  - identify and cater for any necessary remedial treatments to facilitate passage to the Site along Canyonleigh and Brayton Roads once the actual weight and dimensions of the proposed plant are known.
  - be undertaken in consultation with Goulburn Mulwaree and Upper Lachlan Shire Councils.
- A pre construction evaluation of pavement condition of Brayton Road (between George Street intersection and Canyonleigh Road intersection) and Canyonleigh Road (from intersection of Brayton Road to the Site).
- A post construction evaluation of pavement condition of Brayton Road (between George Street intersection and Canyonleigh Road intersection) and Canyonleigh Road (from intersection of Brayton Road to the Site) to determine remedial action required following passage of oversized vehicles.
- Transport of over-mass and over-dimensional loads to be undertaken under RTA and NSW Police permit conditions and approved routes.

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Flora and Fauna

The Marulan Site contains a mosaic of cleared pasture, native woodlands and riparian and aquatic ecosystems that are associated with the Wollondilly River. The previous uses of the Site for agriculture and infrastructure development have removed much of the original woodland vegetation and replaced it with exotic pasture grass. This has led to degradation of some habitats including gully erosion in drainage lines and localised weed infestations. Despite this, substantial stands of relatively intact native woodland remain and, although not high quality old growth, the woodland contains branch hollows, hollow logs and feeding resources of value to locally occurring native fauna and birds.

Construction of the proposed Gas Turbine Facilities would require the clearing of approximately 22 ha of Tableland Hills Grassy Woodland and the associated loss of habitat values. Mitigating factors considered in determining the significance of potential impacts on threatened biota include the limited area of habitat to be impacted, a commitment by the proponents for revegetation and bushland regeneration works.

Assessments undertaken in accordance with the process outlined under section 5A of the EP&A Act (the 7-Part test) for relevant threatened species, concluded that the proposed works are not likely to impose a significant effect on any threatened species, populations or ecological communities listed under the *Threatened Species Conservation Act 1995*.

The Wollondilly River and its associated riparian vegetation lie in close proximity and downslope of the Site. The erosion and sediment controls and other mitigation measures proposed for the Site would ensure that the proposal would not significantly impact these areas. The remainder of the areas considered in this assessment comprise cleared landscapes dominated by exotic agricultural pastures with some isolated paddock trees and clumps of exotic shrubs.

Measures to avoid impacts on biodiversity have been developed, mainly through locating the proposed Facilities as far as possible within cleared grazing lands, whilst allowing for a suitable setback from the Wollondilly River. Mitigation measures (to reduce or minimise biodiversity impacts) would be included in a Construction Environmental Management Plan (CEMP), including pre-clearance surveys, salvage and rescue of fauna and fauna habitats, weed control protcols and management of groundcover vegetation. A biodiversity offsets package has also been proposed, in consultation with DECC, to compensate for direct permanent loss of biodiversity values. A management plan would be prepared and implemented for the agreed offset areas and would include measures to improve biodiversity values such as removal of grazing (through fencing), weed control, feral animal control and retention and salvage of habitat.

Further assessment would be undertaken of the gas pipeline route during the Project Approval phase for that component. Depending on engineering constraints, variations in the route alignment would be considered to avoid areas of high conservation value where possible.

Cultural Heritage

The assessment of Aboriginal and historical cultural heritage values was undertaken and recommendations made after an archaeological survey, an understanding of the regional Aboriginal sites patterning and from comment and input from the relevant Aboriginal groups.

A desktop analysis was conducted for the proposed gas pipeline corridor from the Moomba to Sydney Pipeline to the Marulan Site boundary. The two route options proposed for the gas pipeline within the Marulan Site were able to be assessed as part of the surveys of the Marulan Site.

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The assessment has been conducted in accordance with the *Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation* (DECC Draft, July 2005).

No historical sites are situated within the Marulan Site. Given this, no further archaeological work will be required with regard to historic sites or places within the Study Area.

During the field survey of the Marulan Site, ten Aboriginal archaeological sites were recorded, three of which were classified as having low scientific value and moderate cultural significance and five with moderate scientific value and moderate cultural significance. All of these sites are stone artefact scatters or isolated stone artefact occurrences. A number of landforms within the Marulan Site were also identified as having potential to contain further Aboriginal archaeological sites.

Aboriginal representatives from the Pejar Local Aboriginal Land Council and the Gundangarra Tribal Council Aboriginal Corporation participated in the survey. The representatives have contributed input into the survey methods and support the subsurface testing program developed. The following recommendations provide mitigation and management of cultural heritage values within the Project footprint:

- a sub-surface investigation program would be undertaken when the likely areas of ground disturbance within the Marulan Site for the Facilities and associated infrastructure are known following detailed design. This sub-surface investigation program would aim to determine the presence of Aboriginal archaeological sites and to identify the extent of the recorded sites. The draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation would be followed;
- all reasonable attempts would be made to avoid significant Aboriginal archaeological sites within the Study Area through changes to the proposed design and construction methods; and
- if the Aboriginal archaeological cultural material cannot be avoided by the proposed Facilities, then all reasonable attempts to reduce the impact would be made through the development of a Cultural Heritage Management Plan (CHMP). The CHMP would outline strategies for dealing with recorded and un-recorded Aboriginal archaeological sites encountered within the proposed development area.

Further assessments would be undertaken as part of the Project Application for the Gas Pipeline.

Visual Amenity

This visual impact assessment involved an evaluation of the visual character of the landscape surrounding the Site and associated infrastructure corridors, together with an assessment of the potential visual impacts that could result from the construction and operation of the Facilities.

A total of 49 view locations were assessed. The majority of potential view locations assessed were determined to have no (nil visibility, no view to the proposed Facilities), or very restricted views (low visibility) toward the proposed Facilities. One view location was determined to have a medium visibility rating. Two view locations were determined to have a high visibility rating.

The visual impact assessment concluded that the Facilities would have an overall medium visual impact on people living in, or travelling through, the local area, although the potential visual impact would be generally low for the majority of people, including residential view locations, in areas surrounding the Facilities.

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A number of mitigation measures such as vegetation screening, choice of colour and lighting selection are proposed to reduce impacts further.

Water Management

The water requirements, wastewater production, stormwater management and flooding potential have been assessed for both construction and operation phases for the Facilities. This assessment included:

- an estimation of the flooding potential of the Site;
- an assessment of the water quantity and quality impacts, with particular reference to water needs and the Drinking Water Catchments Regional Environmental Plan No. 1 (REP No. 1) heads of consideration;
- the proposed source of water;
- the implementation of water saving measures;
- identification of the quantity and quality of wastewater and how this wastewater is to be disposed of; and
- management of stormwater at the Site.

Based on an average operation of 10% per annum for the EnergyAustralia Facility and 500 hours per annum for Stage 1 of the Delta Electricity Facility, the total operational water requirement for the Facilities would be approximately 14 ML per annum. During Stage 2 of the Delta Electricity Facility, the total operational water requirement of the Facilities would be approximately 76 ML per annum.

In addition to the stormwater captured from the developed areas of the Site, subject to further negotiations and detailed design investigations, the following sources have been considered to meet the operational water requirements for both Facilities:

- Marulan water supply network;
- Marulan sewage treatment plant;
- Moss Vale sewage treatment plant; and,
- Site stormwater runoff.

Any of these water servicing options for each of the Facilities' water demands could be adopted in conjunction with the other options. A decision would be made on the preferred option or option mixes following appropriate assessment of economic and non-economic factors.

Water would be trucked to the Site to meet the operational requirements for the EnergyAustralia Facility. A new pipeline may be considered to meet combined operational needs for EnergyAustralia and Delta Electricity Stage 2 Facilities, which would, among other considerations, reduce truck movements, however this would be subject to further consultation, detailed design and approvals.

Wastewater would be managed to achieve zero discharge from the Site other than natural flows.

All construction works would be undertaken in a manner to minimise the potential for soil erosion and sedimentation.

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This development falls within the area covered by REP No. 1. As such, it is essential that the development meet certain heads of consideration which, while not specifically stated in REP No. 1, are generally established in the Sydney Catchment Authority's (SCA) *Neutral or Beneficial Effect on Water Quality Assessment Guidelines* (Guidelines). In summary, the Facilities would satisfy the requirements laid out in the Guidelines.

Hazards

A Preliminary Hazard Analysis (PHA) has been carried out for the proposed Facilities and the Gas Pipeline. The PHA assessment was carried out in accordance with the Department of Planning's HIPAP No 6 (*Guidelines for Hazard Analysis*) and HIPAP No 4 (*Risk Criteria for Land Use Planning*). The main hazard associated with the proposed Project is associated with the transport of natural gas (predominantly composed of methane gas), which is a flammable gas held under pressure.

Despite the fact that many of the assumptions in the PHA are highly conservative, the results show that the risk associated with this development is very low. The most stringent risk criteria, as required by the Department of Planning, are adhered to.

The risk assessment carried out in this study assumes that the safety assessment process would continue throughout the design, construction and commissioning of the Facilities to refine and update the outcome of the development approval / environmental risk process.

Bush Fire Assessment

The Marulan Site has been identified as bush fire prone within the Goulburn Mulwaree Shire Bush Fire Prone Land Map and has been assessed in accordance with the guidelines set out in the Rural Fire Service document *Planning for Bush Fire Protection*.

Consideration was given to Rural Fire Service guidelines and requirements, and consultation was undertaken with the Yass Rural Fire Service to seek feedback on the proposed bush fire management issues.

Mitigation measures are provided to ensure any risk of bush fire at the proposed Marulan Site is appropriately managed.

Land Use

Developments surrounding the Site are primarily rural residential properties and the TransGrid Switchyard. The majority of the land immediately adjacent to the Site is zoned 1(a) General Rural.

Landowners in the Gas Pipeline Corridor include private landholders, some portions of Crown land and Goulburn Mulwaree Council for the portion crossing Canyonleigh Road.

Mitigation measures detailed in this Environmental Assessment relating to the control of noise levels, air and water quality, traffic and transportation, visual amenity and other environmental matters, would be implemented to ensure that the proposal is managed in an effective and efficient manner, with minimal impact on existing or possible future surrounding land uses during construction or operation.

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The Proponents have been in consultation with surrounding landowners. A number of neighbouring properties are likely be affected by the proposed Facilities due to operational noise. As a result, the Proponents are negotiating with the directly affected landowners. On the basis of the assessments, proposed mitigation measures and negotiations, it is considered that the Facilities would not have a significant impact on existing land use surrounding the Site.

Further consultation and negotiation is to occur with landholders potentially within the corridor when the gas pipeline corridor is defined through further design in the Project Approval phase.

Socio Economic

The existing socio-economic conditions of the area along with the possible impacts of the proposed development have been examined qualitatively. The proposed Facilities in the Marulan region are expected to have positive economic and social impacts during both construction and operation phases.

As a way of further enhancing public infrastructure, and if deemed viable, upgrade works would be undertaken to local sewage treatment facilities to meet the Facilities' operational water requirements.

Draft Statement of Commitments

The Draft Statement of Commitments describes the environmental management to be undertaken during the construction and operation of the Facilities.

The Draft Statement of Commitments has been prepared in accordance with section 75F (6) of the EP&A Act. The inclusion of appropriate environmental management measures into the detailed design and construction of the project would minimise potential adverse impacts on the environment. The proposed adoption of the relevant measures identified in the Draft Statement of Commitments into a CEMP and Operation Environmental Management Plan (OEMP) would be an important component of the proposal and reiterate the commitment of Delta Electricity, EnergyAustralia and their contractors to mitigation of environmental impacts identified in this assessment.

Conclusion

Concept Approval under Part 3A of the EP&A Act is being sought by the Proponents for the construction and operation of the Marulan Gas Turbine Facilities and associated infrastructure. Project Approval is sought for the Common Shared Works.

Mitigation measures to ensure impacts to both the bio-physical and socio-cultural environment remain at an acceptable level throughout the planned lifespan of the development have been factored in to the proposal in the following ways:

- incorporation of appropriate measures into the proposed design of the development; and
- adherence to a CEMP and OEMP, which would dictate the specific environmental policies and management plans under which the Facilities would be constructed and operated.

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The Environmental Assessment has been produced to ensure that the following regulatory and community requirements have been addressed:

- *Environmental Planning and Assessment Act 1979;*
- consistency of the Project with the objects of the *Environmental Planning and Assessment Act 1979;*
- consideration where applicable of State Environmental Planning Policies and Regional Environmental Plans;
- specific requirements identified by the Director – General of the Department of Planning; and
- local residents and businesses.

Having regard to the Environmental Assessment findings and the principles of ESD, the reasons justifying the carrying out of the development in the manner proposed are as follows:

- environmental issues associated with the proposed development of the Marulan Gas Turbine Facilities have been fully considered;
- potential impacts identified are capable of being mitigated and the proposed development does not represent a threat of serious or irreversible environmental damage; and
- biological diversity and ecological integrity of the area would not be affected by the proposed development.

Environmental impacts associated with the proposed development have been identified and addressed in this Environmental Assessment according to the Environmental Assessment Requirements issued by Department of Planning. Where appropriate, environmental safeguards in the form of mitigation measures have been recommended to minimise the environmental effects of the Project.

No significant adverse environmental impacts have been identified through the course of studies. Environmental impacts that have been identified comply with relevant standards and are capable of being mitigated through the use of appropriate environmental controls.