

Staging, Employment and Capital Investment

The proposal is expected to be constructed in stages, with the access road, transmission line and bulk earthworks required for both facility sites (i.e. clearing, benching and creating construction lay-down area and pad for the facilities) expected to be undertaken in a single six-month stage prior to the commencement of facility construction. The EnergyAustralia facility is expected to be developed prior to the Delta Electricity facility, however depending on timing may be constructed at the same time. The EnergyAustralia facility is expected to take approximately 12 months to construct and the Delta Electricity facilities between 12 (Stage 1) and 18 months (Stage 2). The gas pipeline is expected to be constructed at the same time as the facilities and would take approximately six months. The construction timing of the water pipeline is not yet known. Based on a staged implementation, the EnergyAustralia facility is expected to be operational in 2010, whilst the Delta Electricity Stage 1 facility is expected to be operational in 2013 and the Stage 2 facility (should Stage 1 be converted) by 2014.

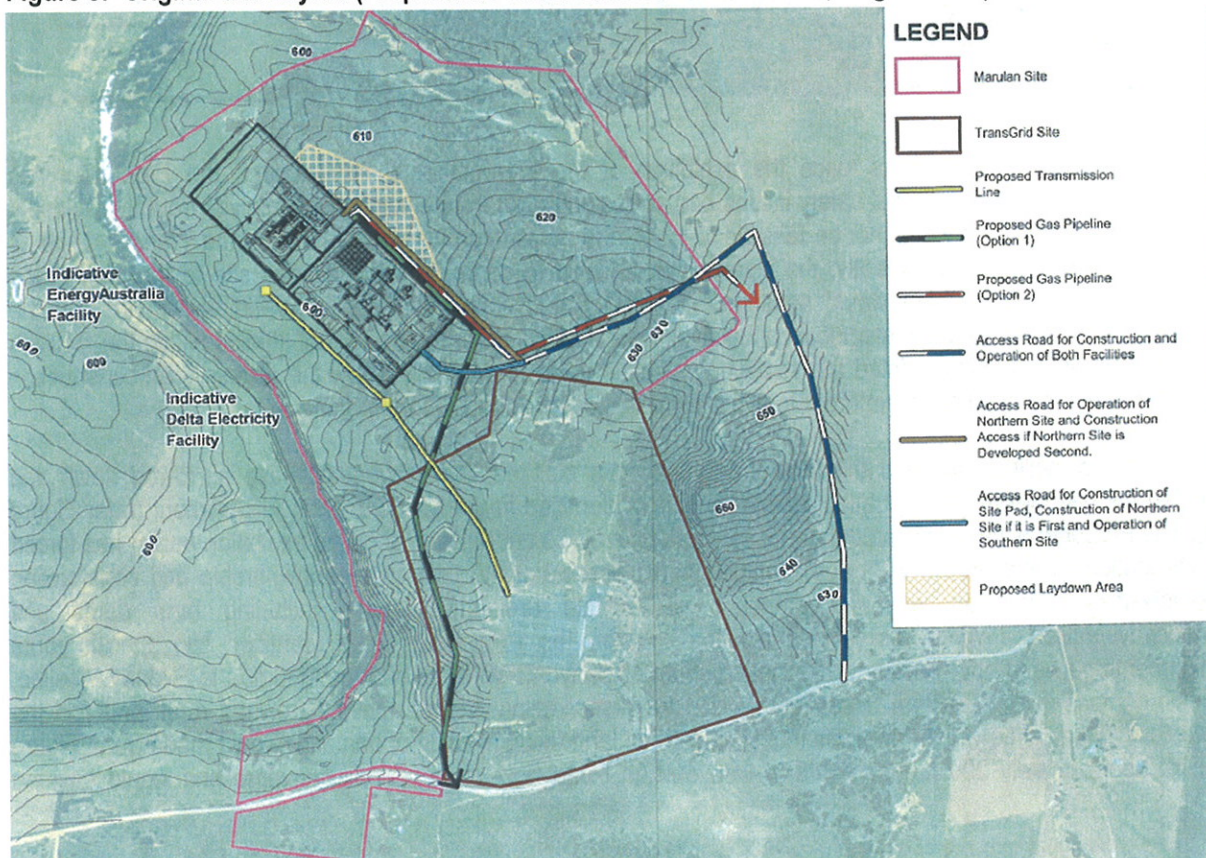
The proposal as a whole is expected to generate up to 500 construction jobs and up to 20 full time equivalent operational jobs on site (two each for the EnergyAustralia facility and the Stage 1 Delta Electricity facility and 18 for the Delta Electricity Stage 2 facility). The proposal has a capital investment value of \$809 million comprising \$266 million for the EnergyAustralia facility, \$515 million for the Delta Electricity Stage 1 and 2 facilities and \$28 million for the common infrastructure.

2.2 Changes to Project Since Exhibition

Facilities Site

Since the exhibition of the Environmental Assessment the Proponents have undertaken additional ecological assessments of the facilities site in response to biodiversity concerns raised in submissions. This additional assessment has confirmed the presence of the Box Gum Woodland endangered ecological community (EEC) on the site, and on this basis, the Proponent has made some alterations to the location of project components within the site as originally identified in the Environmental Assessment (refer Figure 5), to avoid the majority of impacts to this EEC. This has involved moving the southern boundary of the facilities site northwards to avoid all impacts to this community with the exception of a small non-contiguous patch (approximately 0.13 hectares) within the north western portion of the site, which cannot be avoided based on other constraints within the site (including noise, visual and flooding implications).

Figure 5: Original Site Layout (Proponents' Environmental Assessment, August 2008)

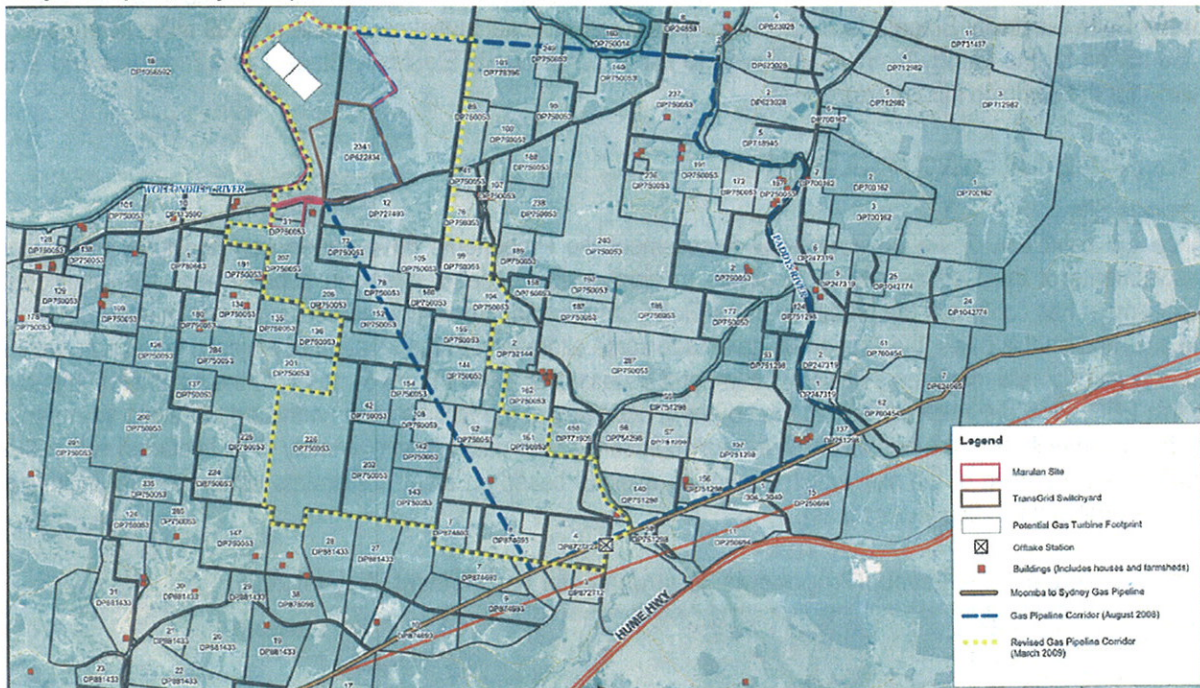


In addition, the transmission line and road access have been realigned further south west and further north respectively, compared to the locations presented in the Environmental Assessment, to avoid impacts to the EEC. The new location of the access road would potentially result in the clearing of more native vegetation than the alignment identified in the Environmental Assessment, however, would completely avoid impacts to the identified EEC. The current configuration of project components within the facilities site is shown in Figure 2.

Gas Pipeline

At the time that the project was exhibited, a preferred gas pipeline corridor had not been determined. Within the facilities site, the Environmental Assessment identified that the pipeline route would travel south either along the western boundary of the TransGrid site or to the east of the TransGrid site. A specific route had not been determined south of the facilities site, but rather a broad corridor between the site and the Moomba-Sydney Gas pipeline were identified as being subject to further investigations (refer Figure 6).

Figure 6: Original Gas Pipeline Investigation Corridor and Revised Corridor (Proponents' Preferred Project Report, May 2009)



Following further investigations since the exhibition of the Environmental Assessment, the Proponent has determined that due to potential safety issues and corrosion risks from electrical conductivity from the adjacent TransGrid switchyard, it would not be feasible to locate the pipeline on the western side of the TransGrid site as originally proposed. Consequently, the pipeline would need to connect to the facilities site to the east of the TransGrid side, where there would be sufficient buffer distance between the TransGrid switchyard and the pipeline to minimise potential electrical conductivity risks. Following further ecological studies within the facilities site, the Proponents have refined this remaining pipeline route to generally follow the access road construction corridor within the facilities site in order to avoid impacts to identified EEC (refer Figure 3).

Between the facilities site and the Moomba-Sydney gas pipeline, the Proponents have narrowed down and shifted the gas pipeline investigation corridor originally identified in the Environmental Assessment (refer Figure 6). The Proponents have indicated that the constraints analysis undertaken since the exhibition period has forced investigations further to the west due to impediments associated with multiple landownership and construction complexities associated with the presence of multiple drainage features including farm dams and waterways/gullies. Within this revised pipeline corridor, the Proponents have identified two specific route alignments between approximately 200 metres south of Canyonleigh Road and the Moomba to Sydney Pipeline, which comprises: the "eastern" (red) route which traverses mainly cleared, privately owned rural land and the "western" (blue) route which traverses mainly vegetated land using existing or unmade Crown roads (refer Figure 3). At approximately 200 metres south of Canyonleigh Road both route options converge and would traverse

north to the facilities site along the eastern side of the TransGrid switchyard through mainly cleared, privately owned rural land along a route referred to as the "north eastern" option (purple and orange) (refer Figure 3).

Water Pipeline

Since the exhibition of the Environmental Assessment, the Proponents have progressed the option of transporting the operational water requirements of the power stations directly from the water supply source to the facilities site via pipeline thereby supplementing or avoiding the need for water trucking onto site. A final decision on whether to progress the option of a water pipeline will be determined once water supply arrangements have been finalised. However, indicative route options, which largely follow existing or proposed infrastructure easements have been identified (refer Figure 4). Assessment of the pipeline route option has been limited to desk top constraints analysis and further detailed assessment of this option would be required prior to construction, should this option be pursued.

2.3 Project Need

Electricity demand in NSW is predicted to rise and exceed existing reserves unless new generation capacity is installed. The NSW Government discussion paper entitled *Energy Directions Green Paper* (2004) identified that additional base load generation capacity may be needed by 2012/13. In addition, the National Electricity Market Management Company (NEMMCO) *2008 Statement of Opportunities* forecasts a deficit in NSW reserve peaking capacity of some 283 megawatts by 2014/15. This however, does not take into account the implications of drought conditions and water restrictions on existing hydro and coal-fired generators, which may in fact result in additional capacity limitations. While renewable energy sources and demand management measures are identified in the *Energy Directions Green Paper* as important measures for meeting electricity demand, it is acknowledged that these approaches are more likely to have a role in future generation, as cost efficiencies are improved. In light of this, gas fired power generation is generally viewed to be a suitably efficient approach for meeting electricity generation needs in the medium term and an important 'transition' fuel that would provide important greenhouse gas advantages when compared to coal-fired generation.

The *Energy Directions Green Paper* identifies gas-fired power stations to be a highly effective measure for meeting peak demand. This is because compared to alternatives such as hydro-pump storage they have a relatively low capital cost, can be constructed in a relatively short time span and have notable environmental benefits in avoiding impacts to sensitive riverine areas. The EnergyAustralia and Delta Electricity Stage 1 plants would help meet the peak electricity deficit identified by providing additional peak generation capacity.

The *Energy Directions Green Paper* as well as the later established NSW Government enquiry into electricity supply in NSW (Owen Report, 2007) identifies that managing and meeting base load demand can occur through the construction of gas generation facilities. Base load generation requires continual operation and therefore high efficiency levels, which a combined-cycle process can deliver. Furthermore, in comparison to the upgrade or building of new coal-fired power stations, base-load generation via combined-cycle technology provides significant greenhouse gas and capital cost advantages. Conversion of the Delta Electricity Stage 1 plant into a combined-cycle plant (or building it outright) would help meet the anticipated deficit in base-load generation identified.

The Department is satisfied that both the EnergyAustralia and Delta Electricity facilities would be capable of generating the electricity required to meet future peaking and base-load demand for the State in a more efficient, cost-effective and sustainable manner compared to other comparable alternatives. The proposed grid connection at Marulan (via the TransGrid switchyard) comprises a further benefit of the proposal as the point constitutes a significant node within the national electricity Market for electricity flows to the major NSW load centres of Newcastle–Sydney–Wollongong. This means that electricity generated by the plants would be efficiently directed to the major centres where most of the peak and base load electricity demand would be generated in NSW. The proposal has the potential to enhance supply security to Sydney by diversifying the supply base to the other load centres and thereby reducing the need for demand from the other load centres to be met by generators within the Sydney Basin, which are better placed to respond quickly to demand in Sydney. Furthermore, the proposed co-location of the two facilities would avoid the need to duplicate various infrastructure required for both facilities and associated environmental disturbance.

The Department notes that the maintenance of electricity supply security in NSW is of critical importance to the State. This is evidenced by energy generation development which would have the capacity to add significant reserve capacity to the network (i.e. greater than 250 megawatts) being declared by the Minister for Planning to be 'critical infrastructure' under the *Environmental Planning and Assessment Act 1979*, by reason of being essential to the State for economic, environmental or social reasons. The proposal as a whole and each of the proposed facilities in isolation (the EnergyAustralia open-cycle, Delta Electricity open-cycle and Delta Electricity combined-cycle facility), would each meet the definition of critical infrastructure under the Minister's declaration of 26 February 2008, as each of the facilities would have the capacity to generate greater than 250 megawatts and therefore significantly add to the electricity reserve capacity of NSW. Each of the power stations has the capacity to significantly add to the security and reliability of the State's electricity capacity.

In consideration of the above matters, the Department is satisfied that the Proponents have established the need for the project.

3. STATUTORY CONTEXT

3.1 Major Project

The project is declared to be a Major Project under *State Environmental Planning Policy (Major Development) 2005* because it is development for the purpose of an electricity generation facility for gas fired generation that has a capital investment value of more than \$30 million (clause 24(a)). The project is therefore subject to Part 3A of the *Environmental Planning and Assessment Act 1979* (the Act) and the Minister for Planning is the approval authority.

On 12 March 2008, the Minister authorised the submission of a concept plan for the proposal pursuant to Section 75M of the Act.

On 26 February 2008, the Minister declared development for the purposes of a facility for the generation of electricity that has a capacity to generate at least 250 megawatts and is the subject of an application lodged pursuant to Section 75E or 75M of the Act prior to 1 January 2013, to be critical infrastructure pursuant to Section 75C of the Act. The proposal as a whole and each of the proposed facilities in isolation (the EnergyAustralia open-cycle, Delta Electricity open-cycle and Delta Electricity combined-cycle facility), would meet the definition of critical infrastructure under this order, as each of the facilities are proposed to generate at least 250 megawatts and each development is subject to a project and/ or concept plan application lodged pursuant to Section 75E or 75M of the Act prior to 1 January 2013.

3.2 Permissibility

Under Clause 34(1) of *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP) "development for the purposes of electricity generation may be carried out by any person with consent on land in a prescribed zone" (or equivalent zoning). The proposal site and adjacent Sydney University owned land (where the access road would be located) are zoned 1(a) General Rural under the *Mulwaree Local Environmental Plan 1995*. This zoning is equivalent to the "RU2 Rural Landscape" prescribed zone listed under Clause 33 of the Infrastructure SEPP. Consequently the facilities site and access road are permissible with consent on the subject land under the provisions of the Infrastructure SEPP.

Subject to certain restrictions on land zoned for National Park (or equivalent zonings), Clause 41 of the Infrastructure SEPP states that "development for the purposes of an electricity transmission or distribution network may be carried out by an electricity supply authority without consent on any land". The proposed transmission line would be located on land zoned 1(a) General Rural under the *Mulwaree Local Environmental Plan 1995* and RU2 Rural Landscape under the *Goulburn Mulwaree Local Environmental Plan 2009* and consequently would not be subject to any restrictions that would apply to National Park zoned land. Furthermore, both Proponents meet the definition of an "electricity supply authority" under Clause 40 of the Infrastructure SEPP, which includes "a person or body engaged in the generation of electricity for supply, directly or indirectly, to the public". Consequently, the transmission line development is permissible without consent on the subject land under the provisions of the Infrastructure SEPP.

Under Clause 53 of the Infrastructure SEPP "development for the purpose of a gas pipeline may be carried out by any person without consent on any land if the pipeline is subject to a licence under the *Pipelines Act 1967* or a licence or authorisation under the *Gas Supply Act 1996*" (subject to certain restrictions on land zoned for National Park or equivalent zonings). The proposed gas pipeline routes are located on land zoned 1(a) General Rural under the *Mulwaree Local Environmental Plan 1995* and RU2 Rural Landscape under the *Goulburn Mulwaree Local Environmental Plan 2009* and consequently would not be subject to any restrictions applying to National Park zoned land. Furthermore, the gas pipeline would be subject to a licence under the *Pipelines Act 1967*. Consequently, the gas pipeline is permissible without consent under the provisions of the Infrastructure SEPP.

Whether the option for a water pipeline would be pursued is yet to be confirmed. The Proponents would need to confirm the routes and permissibility of this element of the project as part of further investigations for the water pipeline (should this option be pursued).

3.3 State Environmental Planning Policies

There are no State Environmental Planning Policies that substantially govern the carrying out of the proposal.

3.4 Minister's Approval Power

Environmental Assessment documentation for the Proponents' joint concept plan application and respective project applications were lodged with the Director-General in August 2008. Pursuant to Section 75H and 75I(2)(g) of the Act, the Director-General was satisfied that the Environmental Assessment documentation prepared for the three applications had addressed the environmental assessment requirements issued for the proposal on 3 March 2008. Copies of the Environmental Assessments are attached (see Appendix D).

The Environmental Assessments were placed on public exhibition from 10 September 2008 until 13 October 2008 and submissions invited in accordance with Section 75H of the Act. The Environmental Assessments were also made publicly available on the Department's website.

Following the exhibition period, the Director-General directed the Proponent to respond to the issues raised in submissions. As the project will require an Environment Protection Licence under the *Protection of the Environment Operations Act 1997*, a copy of the submissions was also provided to the Department of Environment and Climate Change, pursuant to Section 75GH of the Act. A Preferred Project Report (see Appendix C) was prepared by the Proponents to address the issues raised in submissions as well as to describe changes made to the project since exhibition as a result of further investigations. The Preferred Project Report was made publicly available on the Department's website and also provided for comment to relevant agencies (where additional assessment information provided would be of relevance to that agency). This includes the Department of Environment and Climate Change, Department of Water and Energy, NSW Roads and Traffic Authority, the Department of Lands and Rural Fire Services.

The Department has met all its legal obligations so that the Minister can make a determination regarding the project.

3.5 Objects of the *Environmental Planning and Assessment Act 1979*

Section 5 of the *Environmental Planning and Assessment Act 1979* details the objects of the legislation. The objects of the Act are:

- (a) to encourage:
 - (i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment;
 - (ii) the promotion and co-ordination of the orderly and economic use and development of land;
 - (iii) the protection, provision and co-ordination of communication and utility services;
 - (iv) the provision of land for public purposes;
 - (v) the provision and co-ordination of community services and facilities;
 - (vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats;
 - (vii) ecologically sustainable development;
 - (viii) the provision and maintenance of affordable housing; and
- (b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State; and
- (c) to provide increased opportunity for public involvement and participation in environmental planning and assessment.

Of particular relevance to the environmental impact assessment and eventual determination of the subject project application by the Minister, are those objects stipulated under section 5(a). Relevantly, the objects stipulated under (i), (ii), (iii), (vi) and (vii) are significant factors informing determination of the application (noting that the proposal does not raise significant issues relating to land for public purposes, community services and facilities or affordable housing). With respect to ecologically sustainable development, the EP&A Act adopts the definition in the *Protection of the Environment Administration Act 1991*, including the precautionary principle, the principle of inter-generational equity, the principle of conservation of biological diversity and ecological integrity, and the principle of improved valuation, pricing and incentive mechanisms.

It is important to recognise, that while the EP&A Act requires that the principles of ecologically sustainable development be encouraged, it provides other objects that must equally be included in the decision-making process for the subject proposal. The Department has considered the need to encourage the principles of ecologically sustainable development, in addition to the need for the proper management and conservation of natural resources such as water resources, the orderly development of land considering landuse, the need for the project as a whole (which comprises a utility provision), and the protection of the environment including threatened species in Sections 2, 4 and 5 of this report. The agency and community consultation undertaken as part of the assessment process (see Sections 3.4 and 4 of this report), address objects 5(b) and (c) of the Act.

3.6 Nature of the Recommended Approval

Based on its assessment, the Department is satisfied that the project as a whole is justified and in the public's interest with respect to helping to meeting forecast future deficits in the State's electricity supply and is satisfied that the site-specific impacts of the project can be managed consistent with best practice environmental and design standards. In relation to biodiversity impacts, Department considers that the eastern section of the Proponents' identified pipeline corridor would have a superior biodiversity outcome to the western section of the corridor, which traverses mainly vegetated areas.

On the above basis, the Department has recommended concept plan approval for the proposal as a whole, comprising the EnergyAustralia open-cycle plant, the Delta Electricity open-cycle (Stage 1) and combined cycle (Stage 2) plants and all associated infrastructure including the electricity transmission line, access road and options for a water supply pipeline. In relation to the gas pipeline corridor, Department has recommended that only the eastern section of the gas pipeline corridor be granted concept plan approval as it would provide far superior biodiversity outcomes to the western section of the corridor. In this regard, the Department has recommended that the Minister use her discretion under Section 75O(4) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to modify the concept plan approval to remove the western section of the gas pipeline corridor which traverses vegetated areas. Concept plan approval does not grant approval to construct, but approves the general scope and scale of the project to provide certainty to the public and surrounding landowners of the general footprint of the proposal and establishes the environmental framework by which further approvals may be progressed.

In granting concept plan approval, the Minister has the power under Section 75P of the EP&A Act to determine that no further assessment is required for the proposal or any part of the proposal if she considers that the level of detail provided in the concept plan is sufficient to also support project approval for all or part of the proposal. In such a case, the Minister can grant project approval to all or parts of the proposal, providing the Proponent approval to construct that part of the proposal (or the entire proposal). If however, the Minister is not satisfied that the level of detail provided in the concept plan is sufficient to support project approval for all or part of the proposal, the Minister can specify further assessment of the proposal (or part) under Part 3A, 4 or 5 of the EP&A Act and outline the specific environmental assessments requirements that the Proponent must address in seeking further approval.

In this regard, the Department is satisfied that with the exception of the proposed option of a water supply pipeline, sufficient assessment and design detail has been provided on all other component of the project, to warrant full project approval of these components. This includes the specific gas pipeline routes identified within the larger concept plan gas pipeline corridor that has been recommended approval (i.e. the eastern section). Consequently, the Department has recommended full project approval for all components of the proposal with the exception of the water pipeline, subject to stringent conditions of approval in relation to flora and fauna protection and offsets, aboriginal heritage management in consultation with relevant stakeholders, noise and air quality limits, traffic generation, water quality and visual amenity. Concept plan approval for the broad eastern gas pipeline corridor as well as full project approval for multiple gas pipeline routes within that broader corridor would provide the Proponents maximum flexibility in determining a final preferred route during further detailed design investigations into engineering constraints and constructability as well as easement negotiations.

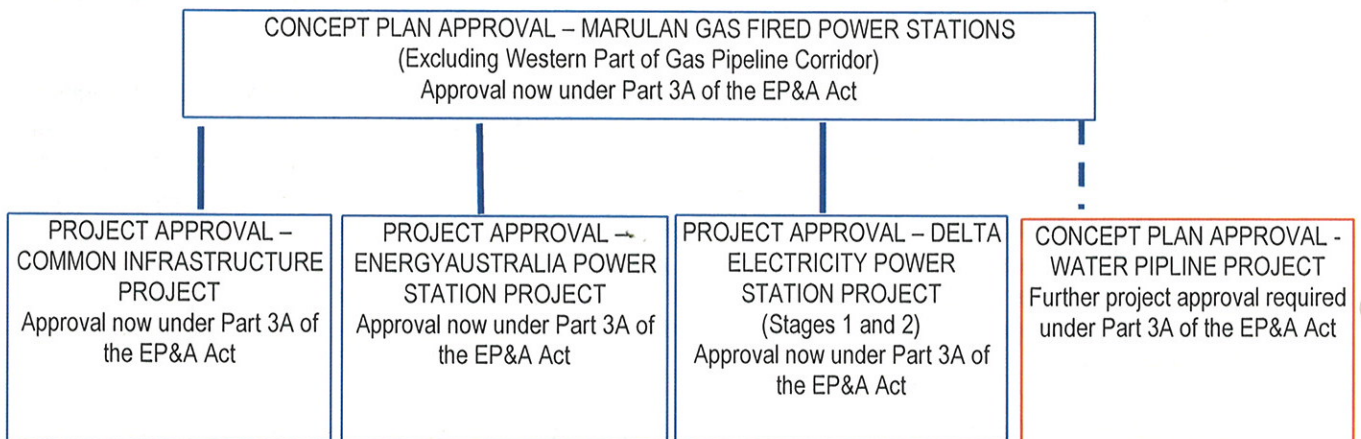
In the case of the water supply pipeline the Department considers that project approval for a specific water pipeline corridor cannot be supported at this stage as only indicative route options have been identified by the Proponents, with the specific route and design details to be further investigated and confirmed during detailed design as part of final water supply negotiations with relevant supply authorities.

The Proponents' desk top constraints analysis indicates that the water pipeline has the potential to traverse a number of environmentally sensitive areas including a swamp catchment (Hanging Rock Swamp) and waterways/drainage lines associated with the Paddy's River complex. Furthermore, the Proponents' assessment indicates that some of the land proposed to be traversed has the potential to contain endangered ecological communities (Temperate Highland Peat Swamp and Box Gum Woodland) and habitat for threatened species (including the Koala, Eastern Bentwing Bat, Speckled Warbler and the flora species *Pomaderris pallida*). The Proponents have not undertaken an indigenous heritage assessment of the corridor. Whilst the Proponents have indicated that the water pipeline route would be confined within existing infrastructure easements as far as possible, the Department considers that given the uncertainties associated with land negotiations for use of such easements, construction requirements and land availability, it may not always be possible to confine the impacts of the pipeline to already disturbed areas. On this basis and given the environmental sensitivity of some of the land to be traversed by the pipeline, the Department considers that (without mitigation) there is the potential for significant environmental impacts associated with the development of the water pipeline. The Department notes that encroachment outside of already disturbed areas would also increase the risk of impacts to indigenous cultural heritage values (which has not been assessed at all by the Proponents to date).

On the basis of the likely scale of the project (between 19 and 33 kilometres) and potential for further significant environmental impacts, the Department considers that the further assessment and consideration of the water pipeline project should be progressed under Part 3A of the *Environmental Planning and Assessment Act 1979*. This approach would also ensure that the assessment and mitigation of key issues associated with the pipeline is progressed in a manner consistent with the remainder of the concept plan, taking into account cumulative impacts associated with already approved components of the concept plan. To ensure appropriate design development of the water pipeline project, the Department has recommended stringent further assessment requirements in relation to landuse, flora and fauna, heritage and surface water impacts as part of the concept plan approval.

The nature of the Department's recommended approval is summarised in Figure 7 below.

Figure 7: Nature of Recommended Approval

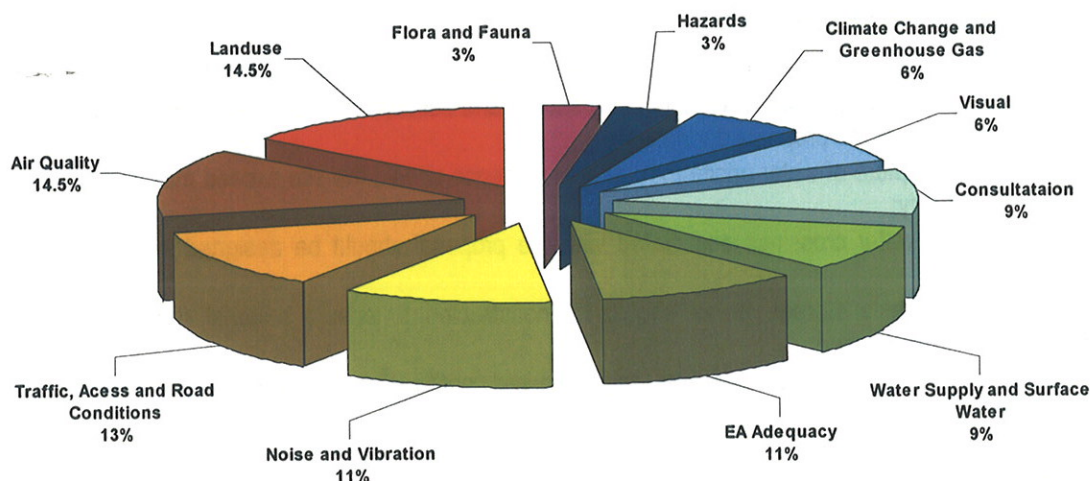


4. CONSULTATION AND ISSUES RAISED

4.1 Public Submissions

The Department received a total of 12 public submissions on the proposal. Three of these comprised form letter petitions with a total of 87 signatures attached. Of these public submissions, nine objected to the proposal (including the three form letter petitions), one objected to the location of the gas supply pipeline within the submitter's property and the remainder did not state a position. The key issues identified in public submissions are summarised in Figure 8.

Figure 8: Issues Raised by Public Submissions



4.2 Submissions from Public Authorities

Eight submissions were received from public authorities: the Commonwealth Department of Defence, Commonwealth Aviation Safety Authority, NSW Department of Environment and Climate Change, NSW Department of Water and Energy, Sydney Catchment Authority, Hawkesbury-Nepean Catchment Management Authority, Goulburn-Mulwaree Council and Upper Lachlan Council. Six of the agencies raised no objections to the proposal, however raised issues for the Department's consideration. The Department of Environment and Climate Change objected to the location of the western gas pipeline route on the grounds of biodiversity impacts. Goulburn-Mulwaree Council objected to the proposal on the grounds of amenity and traffic impacts.

Commonwealth Department of Defence (DoD)

- Advised that the proposal is located outside of any areas affected by the Defence (Areas Control) Regulation and therefore would not impact on the safety of military flying operations; and
- Raised no objection to the project subject to the plume rise hazard assessment of the proposal being assessed by the Commonwealth Civil Aviation Safety Authority (CASA).

Commonwealth Aviation Safety Authority (CASA)

- Advised that the vertical extent of the emissions plume associated with the project would require the designation of a 'danger area' in aeronautical charts to alert pilots to hazards present in the air space above the site.

Department of Environment and Climate Change (DECC)

- Stated preference for all archaeological salvage work to be undertaken prior to a determination on the proposal, however if not possible that this be undertaken prior to the commencement of construction

- subject to an appropriate Aboriginal Heritage Management Plan, including provisions for consultation with the indigenous community and measures for dealing with burials and other highly significant finds;
- Expressed support for the indigenous heritage consultation undertaken as part of the Proponent's indigenous heritage assessment and support for the recommendations in the assessment;
- Raised the following concerns regarding the ecological impact assessment:
 - insufficient information on the impacts to hollow bearing trees;
 - insufficient survey effort with respect to stag watching for bird species;
 - concern regarding the potential impacts of the proposal on threatened bird species habitat, endangered ecological communities, habitat fragmentation and habitat loss;
 - further justification for why the impacts to vegetation cannot be avoided;
 - insufficient biodiversity offset measures for the proposed impact; and
- Recommended conditions of approval regarding operational noise limits including the need to consider architectural treatment and acquisition rights for receivers predicted to be significantly impacted by noise.

Department of Water and Energy (DWE)

- Noted that the gas pipeline would be subject to a licence under the *Pipelines Act 1967*;
- Raised concerns regarding the availability of a secure and sustainable water supply source to supply the operational needs of the proposal during its life;
- Noted that the capture of water onsite may require a licence should the site exceed maximum harvestable right dam capacity;
- Noted that any water crossings associated with the proposal should be designed in consultation with DWE;
- Noted that all waste storage areas should be constructed to ensure minimal risk of leachate into groundwater aquifers; and
- Recommended conditions of approval that required notification of DWE should groundwater be intercepted during construction.

Sydney Catchment Authority

- Supports the proposed mitigation measures proposed including the maintenance of a 150 metre buffer from the Wollondilly River, no clearing of watercourses or riparian vegetation, operation of on site zero discharge design principles, construction erosion and sediment control measures, and biodiversity offsets to compensate for impacts to vegetation; and
- Satisfied that with the implementation of the proposed safeguards and mitigation measures the EnergyAustralia and Delta Electricity facilities would have a neutral effect on water quality during construction and operation, consistent with the principles of the *Drinking Water Catchments Regional Environmental Plan No. 1*.

Hawkesbury-Nepean Catchment Management Authority

- Raised concerns that the environmental assessment had not sufficiently identified the conservation value of the vegetation to be impacted taking into consideration communities which are nominated for listing (although not yet listed) as an endangered ecological community in NSW, over-cleared landscapes and the connectivity of the site to regional biodiversity corridors;
- Considered that further justification was required of why vegetation impacts cannot be avoided; and
- Considered that further offset measures are required to compensate for the impacts proposed, taking into account the presence of over-cleared landscapes (which cannot be offset due to its rarity).

Goulburn-Mulwaree Council

- Raised concerns regarding the traffic impacts associated with the proposal during construction and operation, particularly on the condition of local roads and amenity impacts to townships that the trucks would pass through (i.e. Marulan Village). Also raised concerns that the traffic assessment had not considered potential cumulative impacts associated traffic generated by surrounding development (including the recently approved Gunlake Quarry);
- Noted that the potential constraints of sourcing water directly from Wollondilly River for the power plants should be balanced against the negative impacts associated sourcing the water from elsewhere and

- trucking onto site (including traffic noise, road dilapidation, traffic and general amenity impacts to surrounding settlements); and
- Noted that the noise and visual impacts associated with the proposal can be suitably mitigated and managed.

Upper Lachlan Council

- Recommended conditions of approval requiring the upgrade of Canyonleigh Road (within the Upper Lachlan Council area) to Ausroad standards and requiring appropriate developer contributions to Council.

4.3 Preferred Project Report

At the end of the exhibition period, the Department directed the Proponent to prepare a response to the submissions received. As a result of further investigation and design refinement undertaken following the exhibition of the Environmental Assessment, as well as in response to issues raised in submissions, the Proponent proposed a number of changes to its proposal to minimise its environmental impact (refer Section 2.2). A Preferred Project Report was prepared to respond to the issues raised in submissions as well as to describe the changes made to the proposal.

The Preferred Project Report (including finalised Statement of Commitments) was made publicly available on the Department's website and a copy provided for comment to the DECC, DWE, the NSW Roads and Traffic Authority (RTA), the Department of Lands (DoL) and NSW Rural Fire Service (RFS). The new or additional issues raised by these agencies are summarised below.

Department of Environment and Climate Change (DECC)

- reiterated its preference for all archaeological salvage work to be undertaken prior to determination of the project and recommended controls to protect recorded heritage items during construction;
- raised concerns regarding the adequacy of Aboriginal participation in additional survey work undertaken for the gas pipeline routes; and
- raised significant concerns regarding the extent of vegetation clearing and adequacy of offsets proposed for the facilities site and as part of the western gas pipeline route, and noted its objection to the western gas pipeline route on the basis of biodiversity impacts.

Department of Water and Energy (DWE)

- reiterated its comments in relation to surface water capture, water crossings and risks to groundwater, however raised no further concerns regarding the availability of water to supply the project.

NSW Roads and Traffic Authority (RTA)

- required that vehicles associated with the project should exit and enter the Hume Highway using the north Marulan Interchange (Brayton Road/ George Street intersection); and
- required that all necessary permits for over-mass/ over-dimensional haulage be obtained from the RTA, prior to the commencement of such transport.

Department of Lands (DoL)

- raised no objection to the proposed traversing of Crown road reserves by the gas pipeline routes subject to all necessary easements being secured prior the commencement of construction.

4.4 Department's Consideration

The Department's consideration of issues raised in public and agency submissions is summarised in Table 1.

Table 1: Department's Consideration of Issues Raised in Submissions

| Issue | Department's Consideration |
|---|--|
| Flora and Fauna | Section 5.1 |
| Air quality | Section 5.2 |
| Noise and vibration | Section 5.3 |
| Water supply | Section 5.4 |
| Traffic, transport, access and road condition | <p>Construction and operational access to the facilities site is proposed via Canyonleigh Road. Access to the gas pipeline is proposed via Canyonleigh from the north and/ or directly from the Hume Highway in the south via the Red Hills Road at grade intersection with the Highway and Wollumbi Road. The RTA has indicated its preference that all project related traffic exit and enter the Hume Highway via the existing grade-separated interchange at Marulan (and then travel to site via Brayton and Canyonleigh Roads) to minimise the incidence of potential unsafe traffic movements to and from the Hume Highway from an at-grade intersection. The Department accepts that the at-grade intersection may pose a higher risk of potential unsafe traffic movements for right hand movements; however considers that existing conditions (which already allow for left hand movements) are unlikely to pose an unacceptable risk for left-in left-out movements particularly given the low volumes of construction and operational traffic expected for the pipeline. Consequently, the Department has recommended a condition of approval requiring the Proponents to only use the Marulan interchange to enter and exit the Hume Highway unless otherwise agreed to by the RTA. This does not preclude the use of other access points to the Hume Highway absolutely, where it can be demonstrated to the RTA that these can be accessed safely.</p> <p>Furthermore, the Department notes that the Red Hills Road intersection is proposed to be upgraded as part of the recently approved Gunlake Quarry development (stage 2), making the higher risk right turn movements illegal and providing for safer left in left out movements. Red Hills Road is also proposed to be extended and connected to Brayton Road north of Marulan village as part of the quarry development and depending on the timing of this connection, would in effect create an alternate access route for construction and operational traffic associated with the power station project to access the facilities site, without the need to traverse through Marulan Village. The Department is satisfied that the upgrade of Red Hills Road has the potential to provide a safe alternate access point from the Hume Highway for additional volumes of traffic associated with the project than those related to the gas pipeline, whilst providing significant advantages of minimising traffic flow through Marulan village. Consequently, the Department has recommended a condition of approval requiring the use of the upgraded Red Hills Road wherever possible during construction and operation. The Department's detailed consideration of other traffic and transport related issues is provided in Section 5.5.</p> |
| Aviation hazard | Section 5.6 |
| Indigenous heritage | Section 5.7 |
| Visual | <p>The facilities site and transmission line would constitute the most visible elements of the proposal, with the tallest components of the EnergyAustralia facility (the stacks) being approximately 30 metres above ground level (AGL) and approximately 40 metres AGL for the Delta Electricity facility. The transmission line would be approximately 35 metres high. The gas pipeline and water pipeline are not expected to be visually intrusive as they would be undergrounded or low to the ground. A number of submissions have raised concerns regarding the potential visual impacts of the proposal particularly that the proposal would be of an industrial nature that it would be inconsistent with the rural amenity of the area.</p> <p>The Proponents' visual impact assessment indicates that the majority of views towards the facilities site would be distant and would be partially obscured by existing screening vegetation which would be retained on site. Screening vegetation would also partially screen views from vehicles travelling along Canyonleigh Road. Two receiver locations of the total 49 locations assessed, were assigned high visibility ratings due to their proximity to the site (within two kilometres) and due to the lack of screen vegetation to obscure views; and one receiver location of the 49 was assigned a medium rating, because it would have views of the site due to its elevated position and the lack of screen vegetation to obscure views. There are no dedicated public look-outs in the surrounding area which have views of the site. The Proponents have proposed a range of mitigation measures to minimise the visual impacts of the project including additional screen planting at the site and at worst affected receivers (should this be agreed to by landowners) and facility design with consideration to low reflectivity surfaces, appropriate colouring to minimise contrast with surrounding vegetation and appropriately directed lighting to minimise intrusive lighting effects at night time.</p> <p>Based on the Proponents' assessment the Department is satisfied that the proposal would not result in a significant visual impact to surrounding residents as in most cases, the</p> |

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| | visibility of the facilities site would be moderated by intervening distance and screening vegetation. The Department notes that the facilities site and transmission line would be located adjacent to existing industrial elements in the area namely the TransGrid switchyard and high voltage transmission line network, and therefore does not consider that the proposal would be wholly inconsistent with the existing visual character of the site. Furthermore, the Department notes that the co-location of facilities has helped to reduce the potential 'spread' of impacts through the duplication of ancillary infrastructure. The Department considers that the residual visual impacts of the proposal can be appropriately managed through the implementation of mitigation measures as suggested by the Proponents. In this regard, the Department has recommended stringent conditions of approval requiring the Proponents to design its facilities (considering lighting, colouring, reflectivity and screen vegetation) to as far as possible minimise the visual intrusiveness of the facilities site to surrounding receivers. |
| Landuse | <p>The main concerns raised in submissions regarding landuse are that the project is of an industrial and polluting nature and therefore inconsistent with the rural lifestyle and landuse of the area; the potential impacts of the proposed gas pipeline route on existing rural and agricultural landuse on private land; the requirements for compensation for landuse impacts; and loss of land along the river for community use. The Department's assessment of the project indicates that the amenity impacts of the project (including noise, air quality, traffic and visual) can be mitigated and managed consistent with best practice standards so as to not result in significant and unacceptable impacts. The Department is satisfied that the proposed location of the plant, adjacent to an existing industrial facility (the TransGrid Switchyard) and away from settled areas (such as the village of Marulan) has been calculated to minimise the potential exposure of intrusive amenity impacts on receivers. Furthermore, the co-location of facilities has also helped to reduce the extent of land potentially affected by the proposal.</p> <p>The Department is satisfied that the Proponents have identified gas pipeline route options with due consideration to potential landuse impacts including on agricultural and rural land. The Department has considered landuse impacts balanced with potential flora and fauna impacts in Section 5.1. Any direct impact on private property would be subject to appropriate compensation as part of a pipeline easement. In relation to the last point, the Department notes that the river frontage site bought by the Proponents for the project was previously privately owned and not publicly accessible. Consequently, the Department does not consider that the proposal would result in any noticeable change to existing access arrangement to this section of river frontage. Given the extent of the Wollondilly river, the Department does not consider that the location of the project along one small section of the river would significantly affect the recreational values of the river.</p> <p>The Department has recommended conditions of approval requiring the Proponent to meet all relevant legislative requirements (including permits, licences and consents) applicable to the project during its development.</p> <p>The Department has considered the DWE's recommendations in relation to stormwater harvesting rights, sensitive construction methodology at waterway crossings, and minimising the potential for groundwater interception during excavation and the potential for wastewater leachate into groundwater from wastewater ponds, in formulating recommended conditions of approval for the proposal.</p> <p>The Department is satisfied that these matters have been adequately addressed in the Proponent's Preferred Project Report and Statement of Commitments.</p> |
| Consent for Crown Road Easement | The Department has recommended conditions of approval requiring the Proponent to meet all relevant legislative requirements (including permits, licences and consents) applicable to the project during its development. |
| Stormwater Capture, Waterway Crossings, Groundwater | The Department has considered the DWE's recommendations in relation to stormwater harvesting rights, sensitive construction methodology at waterway crossings, and minimising the potential for groundwater interception during excavation and the potential for wastewater leachate into groundwater from wastewater ponds, in formulating recommended conditions of approval for the proposal. |
| Hazard, Water Quality, Flood Risk, Climate Change/ Greenhouse Gas | The Department is satisfied that these matters have been adequately addressed in the Proponent's Preferred Project Report and Statement of Commitments. |
| EA Adequacy | The Department is satisfied that the information presented in the Proponent's Environmental Assessment and Preferred Project Report provides sufficient information to enable the assessment of the project as proposed. |
| Consultation | The Department is satisfied that the consultation undertaken as part of the project has provided the community with opportunity to comment on the project consistent with statutory requirements (refer Sections 3 and 4). The consultation undertaken by the Proponents during and since the preparation of the Environmental Assessment is detailed in the Proponents' Preferred Project Report and is considered to be acceptable. |
| Development Contributions | In its submission on the proposal, Upper Lachlan Council sought development contributions for the purposes of community enhancement totalling 1.5% of the proposal capital cost (equivalent to approximately \$13 million). In subsequent correspondence to the Department Upper Lachlan Council advised that the \$13 Million would be required to fund road maintenance works in the local government area (LGA) and requested a further \$5 Million to fund the establishment of a community centre in the LGA. The Department considers that development contributions should only be levied where a clear nexus has been established that the project would lead to an increased demand for public services in the area or where there is a high likelihood that the project would result in residual amenity impacts at a local level even after the implementation of all reasonable and feasible mitigation measures. |

Whilst the facilities site would be sited in the Upper Lachlan local government area (LGA), the project is not expected to result in a significant increase in demand for services from this LGA. The project's impact on existing services would be limited to operational water requirements being sourced from Goulburn-Mulwaree or Wingecarribee Council water/ sewage treatment plants and the use of Council roads during construction and operation. The only roads proposed to be used within Upper Lachlan LGA would be approximately 200 metres of Canyonleigh Road located within this LGA for accessing the facilities site during construction and operation. The Department is satisfied that the operational water requirements of the project would not affect water supply security in the local region and notes that the sourcing of water would be subject to appropriate commercial agreement with Goulburn-Mulwaree and Wingecarribee Councils (including where required contributions to any upgrades required to the water/ sewage treatment plants to achieve required water quality to supply the power stations). With respect to traffic generated by the proposal during construction and operation, the Proponents' assessment indicates that these could be accommodated by the existing road network without significant impacts to level of service. Notwithstanding, the Proponents have committed to further investigate and upgrade the road network as necessary to accommodate the construction and operational traffic requirements of the project (in particular, over dimensional and over mass traffic). Specifically, the Proponents have committed to sealing the section of Canyonleigh Road between the project site and Brayton Road (including the section within Upper Lachlan LGA). In this regard, the Department notes that the project is likely to directly benefit the local community through infrastructure upgrades and would specifically offset any additional demand of service to the short section of Canyonleigh Road within Upper Lachlan LGA. On the above basis, the Department is satisfied that existing commitments by the Proponents would sufficiently address service demand impacts associated with the project such as to not warrant additional contributions.

Notwithstanding the above, Upper Lachlan Council has argued that development contributions are justified to offset community amenity impacts as the proposal has the potential to impact on receivers within this LGA and. In this regard, the Department is satisfied that the proposal is unlikely to result in significant residual amenity impacts to the local community (including those located in the Upper Lachlan LGA), noting that the Proponents' assessment has demonstrated that the project can be developed to achieve acceptable noise and air quality goals at all surrounding receivers. In addition the project is unlikely to result in significant adverse visual impacts given that it would be located directly adjacent to an existing TransGrid transmission yard, which is already industrial in nature. The Department notes that joint development of the power stations has sought to minimise potential visual and landuse impact of the project by confining disturbance to one site. Furthermore, the Department notes that the proposal would provide significant benefits to the State with respect to electricity supply which would ultimately have local benefits in terms of electricity reliability and security. The project would also directly benefit local communities particularly during the construction phase by injecting monies into the local service economy. Notwithstanding the above benefits, the Proponents have proposed a specific community contribution of \$30,000 to the local branch of the Rural Fire Services (to fund specific bushfire equipment) and an additional one-off contribution to Council totalling \$100,000. Whilst, the Department does not consider that the project would result in significant residual amenity impacts to the local community such as to warrant specific community contributions, the Department supports the good faith commitments made by the Proponents in this regard and has incorporated these measures into its recommended conditions of approval as a means of reflecting the Proponents' commitments. In relation to the contributions to Council, the Department has recommended conditions of approval requiring that community enhancement works that would be funded by the monies be determined in consultation with Council and the Proponents.

5. ASSESSMENT OF ENVIRONMENTAL IMPACTS

After consideration of the Environmental Assessment, submissions, Preferred Project Report and Statement of Commitments the Department has identified the following key environmental issues associated with the proposal:

- Flora and fauna;
- Air quality;
- Noise and vibration;
- Water supply;
- Traffic and transport;
- Aviation safety; and
- Aboriginal and European heritage.

All other issues are considered to be adequately addressed by the Proponent's Statement of Commitments.

5.1 Flora and Fauna

Issue

The Proponents have identified that the project would result in the clearing of vegetation at the facilities site and for the construction of a gas pipeline route. The facilities site comprises cleared grazing land along the western side adjacent to the Wollondilly River and generally vegetated areas across the remainder of the site. The vegetation on site has been mapped as Red Gum Woodland, Snow Gum Candlebark/ Applebox Woodland, Cabbage Gum Woodland, Tableland Hills Grassy Woodland, and the Box Gum Woodland endangered ecological community (EEC). The Proponents have identified that the Box Gum Woodland recorded on site only meets the definition of an EEC under New South Wales *Threatened Species Conservation Act 1995* (TSC Act) and not the definition of an EEC under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The vegetation is also considered to provide suitable foraging habitat for eight species listed under the TSC Act (the Diamond Firetail, Gang-Gang Cockatoo, Hooded Robin, Powerful Owl, Eastern Falsistrelle, Eastern Bent-wing Bat, Greater Broad-nosed Bat and Little Bent-wing Bat), five of which have been recorded on site (Diamond Firetail, Gang-Gang Cockatoo Hooded Robin, Eastern Falsistrelle and Eastern Bent-wing Bat).

The Proponents have indicated that the extent of vegetation clearing that can be avoided at the facilities site has been constrained by the need to ensure an appropriate buffer distance (i.e. 150 metres) between the effluent management areas of the facilities and the Wollondilly River, consistent with the requirements of the Sydney Catchment Authority (SCA), to avoid the potential for surface water impacts to the river which forms part of Sydney's drinking water catchment. This buffer distance would also minimise flood risk to the facilities by enabling the facilities to be located at an elevation > 605 Australian Height Datum (AHD), which is above the predicted 1 in 100 year Average Recurrence Interval (ARI) flood level for the site. Notwithstanding, to minimise the extent of impacts to the ECC recorded on site, the Proponents have proposed several refinements to the facilities layout identified in the Environmental Assessment (refer Section 2.2). The new layout would result in greater impacts to the Tableland Hills Grassy Woodland whilst almost completely avoiding the Box Gum Woodland EEC.

On the above basis, the Proponents have determined that at worst case the facilities site would require the clearance of approximately 30.5 hectares of vegetation for the power station facilities, construction laydown, transmission line and access road (refer Figure 9). This would comprise, approximately:

- 14.4 hectares of exotic vegetation;
- 16 hectares of native forest and woodland (0.7 hectares of Snow Gum Candlebark Applebox Woodland and 15.3 hectares of Tableland Hills Grassy Woodland); and
- 0.1 hectares of the Box Gum Woodland EEC.

The Proponents have also calculated the additional clearing that would be required for the construction of the identified gas supply pipeline routes (both within and outside of the facilities site), where this has not already been accounted for in the worst case calculation for the facilities site. In doing this, the Proponents have presented the worst case vegetation clearance associated with the "eastern" and "western" routes using the "north-eastern"