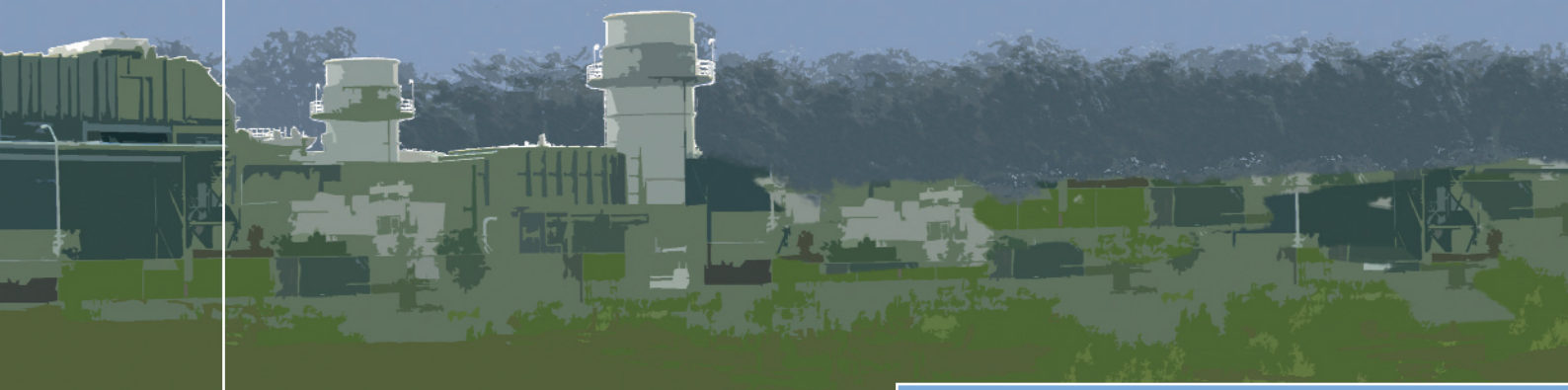
Appendix B
Statutory Authority Correspondence



MARULAN GAS TURBINE FACILITIES

ENVIRONMENTAL ASSESSMENT

JOINT CONCEPT APPLICATION

VOLUME 2 | APPENDICES | August 2008

NSW GOVERNMENT
Department of Planning

Contact: Dinuka McKenzie
Phone: (02) 9228 6348
Fax: (02) 9228 6355
Email: dinuka.mckenzie@planning.nsw.gov.au
File: 9042594

Ms Nicole Brewer
Associate Environmental Engineer
URS Australia Pty Ltd
Level 3, 116 Miller Street
NORTH SYDNEY NSW 2060

Dear Ms Brewer

Marulan Gas Fired Power Stations (MP 07_0174) – Concept Plan Authorisation

I refer to the request by Energy Australia and Delta Electricity to submit a concept plan for the proposed joint development of two gas-fired power stations and associated infrastructure near Marulan.

I wish to advise that on the 12 March 2008, the Minister for Planning authorised the submission of a concept plan for the proposal.

Should you require further clarification on this matter, please do not hesitate to contact Ms Dinuka McKenzie on the above contact details.

Yours sincerely

. 13.3.08

Caitlin Bennett
A/ Manager, Energy and Water
Major Infrastructure Assessment

Our reference : DOC07/52640; FIL07/13611
Contact : Craig Jones, 6122 3100

Mr Scott Jeffries
Manager
Critical Infrastructure and Special Projects
Department of Planning
GPO Box 39
Sydney NSW 2001

Dear Mr Jeffries

Environmental Assessment Requirements for the Marulan Gas Turbine Facility

I refer to your request for the Department of Environment and Climate Change (DECC) requirements for the environmental assessment (EA) of the Marulan Gas Turbine Facility received by the DECC on 21 December 2007. DECC officers attended the Planning Focus Meeting on the 15th January 2008.

The DECC has considered the details of the proposal as provided by Department of Planning (DoP), Energy Australia and Delta Electricity and has identified the information required to assess the environmental impacts. The detailed requirements are set out in Attachments 1-4.

In summary, the DECC's specific information requirements for the proposal are:

1. A comprehensive assessment of air emissions.
2. A comprehensive assessment of greenhouse gas emissions and evaluate the feasibility of measures to reduce emissions associated with the proposal;
3. An assessment of local, regional, interregional and cumulative air quality impacts from the plant.
4. An assessment of water source issues and consideration of alternatives to potable water and extraction from the river, including the use of treated effluent and industrial wastewater.
5. A description of all wastewater generated at the site, an assessment of the likely impact of these and options for reuse.
6. A noise impact assessment with particular attention to emissions from the operation of the gas turbine plant.
7. Identification and classification of all wastes in accordance with the DECC's waste guidelines, and identification of options for reducing waste volumes and reusing/recycling wastes as far as practicable.

8. A flora and fauna impact assessment in accordance with the draft "Guidelines for Threatened Species Assessment". A number of threatened entities are known to occur or have potential to occur in the Marulan area.
9. An Aboriginal cultural heritage impact assessment in accordance with the "Guidelines for Aboriginal Cultural Heritage Assessment" under s75 (F) of the EP&A Act. This includes the need for consultation with the Aboriginal community.

The DECC would also request that the Applicant be provided with a full unaltered version of the DECC's assessment requirements and guidelines as set out in Attachments 1-4.

Attached to this letter DECC has provided Environmental Assessment Requirements for each of the following proposals;

- Concept Application- Marulan Gas Turbine Failities (MP 07_0174)
- Project Application- Marulan Gas Turbine Facility (MP 07_0175)
- Project Application- Marulan Gas Turbine Facility (MP 07_0176)

DECC notes advice from DoP that the proponents may seek project approval for joint on site ancillary infrastructure, as part of the concept approval. The information provided for these aspects should be comprehensive enough to determine impacts, mitigation and any necessary offset.

DECC notes that the proponent has advised that a project application for the gas pipeline connection will be lodged at a future date.

At the concept approval stage all impacts with off-site, regional or cumulative implications will need to be assessed in detail, including for the pipeline and joint infrastructure. Any statement of commitments for biodiversity offsets should demonstrate their relevance to the proposal and its impacts, and the ability of the proponent to secure those offsets.

The DECC requests that 5 hard copies and a CD of the EA are provided for assessment. These documents should be lodged at the DECC's South East Regional Office, 30 Lowe Street, Queanbeyan, NSW 2620. If you have any queries regarding this matter please contact Craig Jones or David Winfield on 6122 3100.

Yours sincerely

21/01/08.

David Winfield
Head of Operations- South East Region
Environment Protection and Regulation Group

Enclosure

Attachment 1

Specific Information required by the DECC

The environmental assessment must provide sufficient information for the DECC to be able to fully assess the development in so far as the impacts relate to environmental legislation administered by the DECC. The environmental assessment must include a comprehensive description of the production processes, all discharges and emissions to the environment, an assessment of likely environmental impacts, and a comprehensive description of any proposed control measures.

The proposal is scheduled under the Protection of the Environment Operations Act 1997 and will require the issue of an Environment Protection Licence under that Act. Therefore, the requirements of Section 45 of the Protection of the Environment Operations Act 1997 must be addressed.

The DECC requires the environmental assessment to address the following issues in detail:

1. Air Issues

The environmental assessment must include a robust Air Quality Impact Assessment (AQIA) based on dispersion modelling in accordance with the publication "*Approved Methods and Guidance for Modelling and Assessment of Pollutants in NSW*". The DEC requirements for the AQIA to be included in the environmental assessment are specified in Attachment 2 of this EAR. The facility must be designed, operated and maintained so that there is no offensive odour beyond the boundary of the premises.

The environmental assessment must describe in detail the measures proposed to mitigate the impacts and the extent to which the mitigation measures are likely to be effective in achieving the relevant environmental outcomes. A Cost Benefit Analysis on different mitigation measures/ technologies that have been investigated should also be included.

2. Greenhouse Emissions

The *NSW Greenhouse Plan* (2005) commits the NSW Government to pursuing greenhouse gas emission reductions in NSW. The greenhouse impacts of new development is therefore a key consideration in the Environmental Assessment and development consent process.

When considering new developments with potentially significant greenhouse implications, the DECC considers key principles to be:

- The minimisation of direct greenhouse gas emissions (ie those generated on-site). This can be achieved, for instance, by the adoption of best available technology for fuel combustion and/or greenhouse gas capture and destruction.
- The minimisation of indirect greenhouse gas emissions (ie those generated off-site as a result of the activity, for example through electricity use). This can be achieved, for instance, by the adoption of measures to maximise energy efficiency and/or agreement by the proponent to purchase renewable energy (Green Power).

- The consideration of whether there are opportunities to offset residual greenhouse gas emissions that are associated with the activity, and of the cost effectiveness of these opportunities.

The DECC requires the following in relation to greenhouse emissions:

- A comprehensive assessment of and report on the project's predicted greenhouse gas emissions (tCO2e). Emissions should be reported on a:

a. Greenhouse intensity (emissions per unit of production) basis;
b. Total annual emissions basis; and
c. Total project lifetime basis, including construction, operation and decommissioning.

- The assessment of project emissions should include direct emissions (ie, those occurring on the project site), indirect emissions (eg those offsite as a result of the project, such as through electricity use) and any significant upstream and/or downstream emissions associated with the project.
- The emissions should be estimated using an appropriate methodology, in accordance with the Department of Planning's Draft "*Guidelines: Energy and Greenhouse in EIA*" (2002) and the Australian Greenhouse Office's "*Factors and Methods Workbook*" (2006).
- Emissions should be compared in the EA against:

a. Industry 'best practice' emissions intensity for the activity; and
b. Total annual NSW emissions, so the impact of the proposal on NSW emission reduction targets can be evaluated.

- The proponent should evaluate and report on the feasibility of measures to further reduce greenhouse gas emissions associated with the project.

3. Water Issues

The sources of water for steam generation, and the disposal arrangements for waste water from these systems are key water issues associated with this proposal. Other water issues include erosion and sediment control during construction activities including pipelines, stormwater runoff control and chemical storage during operation, and on-site sewage management.

To enable these issues to be properly considered, the environmental assessment should address the following:

- The quantities of water required for the site such as washdown and personal use. The environmental assessment should also examine water requirements for the proposed Stage 2 which involves the introduction of a steam turbine to utilise waste heat.

- The sources of water to be delivered to the site including river off-takes, mains water, recycled effluent and industrial sources.

- The DECC supports proposals to reuse industrial effluents, for example as feed water at the plant, where it is safe and practicable to do so and it provides the best environmental outcome. Pre-treatment of these water sources may however be required to render the water suitable for use in a Power Station. Depending on the source of the water, pre-treatment may be needed to avoid process, environmental, human health and/or localised amenity problems. For example, from a process point of view, secondary treated municipal sewage may require pre-treatment to remove calcium and magnesium, and thereby reduce

the risk of excessive scaling or further disinfection to reduce health risks to employees working at the Power Plant. For guidance on water quality requirements, refer to *Guidelines for Sewerage Systems: Use of Reclaimed Water*, November 2000, ARMCANZ et al and ANZECC criteria.

- If it is proposed to build an amenities block for site employees, the environmental assessment should describe the sewage treatment and effluent management system, estimate the quantity and quality of the effluent, and describe the proposed method of disposal. If land irrigation is proposed (on-site or elsewhere), the environmental assessment should demonstrate by way of water balance and land capability assessment that the effluent management system is sustainable and will not result in pollution of water courses or groundwater. Further guidance is available in the DECC guideline *Use of Effluent by Irrigation*, (March 2005) and Department of Local Government "*On-site Sewage Management for Single Households* (Feb 1998).

- In addition to process wastewaters and to discharges from the on-site sewerage system, the environmental assessment should describe measures for dealing with the following water pollution issues:
  - Measures to control erosion and sedimentation during construction activities, including construction of the gas supply and water supply/discharge pipelines. Further guidance is available in the guideline *Managing Urban Stormwater - Soils and Construction"*, NSW Landcom, Fourth Edition, March 2004
  - Measures to capture and treat stormwater runoff from the site during the operational phase.
  - Sealing areas of the site to prevent soil erosion.
  - Spillage controls and bunding for materials used onsite, in particular any biocides and other chemicals used to treat the process water and/or wastewaters prior to discharge.

4. Noise Issues

The environmental assessment should identify all potential noise sources and describe the extent to which noise emissions are likely to impact on any residential and/or other sensitive receivers in the vicinity of the site. The EPA publication *New South Wales Industrial Noise Policy* provides the methodology and assessment criteria applied by the EPA to assess the impacts and to determine project-specific noise planning levels. The environmental assessment should include a noise impact assessment in accordance with this Policy.

The noise impact assessment should take into account both the construction and operational phases of the development (including noise from the transmission equipment onsite), clearly specify the proposed hours of operation for both phases, and take into account adverse weather conditions including temperature inversions. Sound power levels (measured or estimated) for all plant and equipment should be clearly stated and justified. There should be an assessment of cumulative noise impacts, having regard to any other developments existing and/or approved for the locality. Where adverse noise impacts are predicted, the impact assessment should provide details on proposed noise control measures.

Road transport to and from the premises has the potential to increase disturbance at residential properties along private or public haulage routes. To assess the extent of the impact, the noise impact assessment should identify the transport route(s) to be used, the hours of operation, anticipated traffic movements, and expected increase in noise levels. The publication *Environmental Criteria for Road Traffic Noise* (EPA, 1999) describes the methods generally

applied by the DEC to determine noise planning levels for road traffic noise in locations of varying sensitivity.

The method, data and assumptions used to assess the impact of road haulage on residential properties must be fully documented and justified. Where disturbance due to road transport is likely to exceed the recommended criteria, the environmental assessment must describe the measures proposed to mitigate the impacts and the extent to which the measures are likely to be effective in achieving the relevant criteria.

5. Waste Issues

The environmental assessment should describe all wastes that will be generated by the proposal including, for each of the main waste streams, the process from which it will be generated; its quantity and composition; its classification under the Protection of the Environment Operations Act 1997; and the proposed arrangements for dealing with the waste.

Guidance on waste classification and management issues can be obtained from the publication *Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes* (EPA, 1999). The environmental assessment should clearly identify methods of reducing waste volumes and recycling and reusing wherever possible.

The avenues for disposal of industrial/hazardous waste are limited within New South Wales at present and the proponent should detail the likelihood of generation of these wastes and anticipated storage/disposal methods.

The environmental assessment must identify any fuel or chemical storage areas to be established on the site and describe the measures proposed to minimise the potential for leakage or migration of pollutants into the soil, groundwater or surface water systems.

6. Other Construction Phase Issues

The impacts of any specific activities involved in site preparation should be identified. Details of appropriate erosion and sediment controls, and dust and noise controls should be included in the environmental assessment.

All areas disturbed during construction which are not included in the working area of the plant must be revegetated to a high standard.

The likelihood of disturbing acid sulphate soils and /or pre-existing site contamination during the construction phase must be detailed in the environmental assessment and, where applicable, contingency plans must be proposed for management of acid sulphate or contaminated soils.

7. Monitoring Programs

The environmental assessment should specify and assess all monitoring programs for measuring noise, air quality and water quality monitoring during the construction phase and on-going operation of the facility. These monitoring programs should be capable of assessing whether or not the development achieves a satisfactory level of environmental performance. The evaluation should include a detailed description of the monitoring strategies, sample analysis methods and the level of reporting proposed.

8. Community Consultation

The environmental assessment should outline procedures for responding to breaches of environmental conditions and for reporting these incidents both to the regulatory agencies and to the community. This includes complaint handling mechanisms and emergency response procedures.

9. Contaminated Land

The environmental assessment must document the management of any land contamination. This includes ensuring that land is not allowed to be put to a use that is inappropriate because of the presence of contamination, and incorporates mechanisms to ensure that:

- planning authorities consider contamination issues when they are making development decisions;
- local councils provide information about land contamination on planning certificates that they issue under section 149 of the Environmental Planning & Assessment Act; and
- Land remediation is facilitated and controlled through State Environmental Planning Policy 55 – Remediation of Land (SEPP55).

The following documents should form the basis for the contaminated land assessment for the proposed development:

- Managing Land Contamination: Planning Guidelines - SEPP55 - Remediation of Land, Department of Urban Affairs and Planning and NSW EPA, 1998:
- Contaminated Sites – Guidelines for Consultants Reporting on Contaminated Sites (Environment Protection Authority (EPA) 1997);
- Contaminated Sites – Guidelines on Significant Risk of Harm and Duty to Report (EPA, 1999).

10. Impacts of the project on threatened species and their habitat

A field survey of the site must be conducted and documented in accordance with the draft "Guidelines for Threatened Species Assessment" (Refer to DoP).

Likely direct and indirect impacts on threatened species and their habitats must be assessed, evaluated and reported, including those that may arise from any upgrading of Canyonleigh Road, the pipeline and joint offsite infrastructure. The assessment must specifically report on the considerations listed in Step 3 of the draft guidelines.

The EA must clearly state whether it meets each of the key thresholds set out in Step 5 of the draft guidelines and describe the actions that will be taken to avoid or mitigate impacts or provide appropriately calculated offsets to compensate for the impacts of the project on threatened species and their habitats. This must include an assessment of the effectiveness and reliability of the offset and impact mitigation measures and any residual impacts after these measures are implemented.

The EA must assess the impacts on woodland birds, orchids, White Box Yellow Box Blakely's Red Gum Woodland endangered ecological community (EEC), and hollow-dependent gliders, bats and birds. Attachment 3 provides a list of relevant threatened entities to be assessed for this project. When assessing the EEC consideration must be given to the DECC Box-Gum Woodland Identification Guidelines, and particularly to any potential occurrences of secondary

grassland derived from the past clearing of the EEC. Advice on these identification guidelines should be sought by the proponent from DECC.

Offsets may need to be provided for clearing associated with the proposal and the EA should demonstrate the calculation of these offsets. Identified offsets must be verified as part of the EA and the ability of the proponent to secure the offsets must be demonstrated. The proponent should consider the revegetation of a wide riparian/habitat corridor along the Wollondilly River as a component of the offset requirements. The required offsets must be incorporated into the Statement of Commitments.

11. Impacts of the project on Aboriginal cultural heritage values

The EA should address and document the information requirements set out in the draft "Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation" available from Dept of Planning involving surveys and consultation with the Aboriginal community.

The EA must identify the nature and extent of impacts on Aboriginal cultural heritage values across the project area. Accordingly, the EA must describe the actions that will be taken to avoid or mitigate impacts or compensate to prevent unavoidable impacts of the project on Aboriginal cultural heritage values. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.

The EA needs to clearly demonstrate that effective community consultation with Aboriginal communities has been undertaken in determining and assessing impacts, developing options and making final recommendations.

Attachment 2

AIR EMISSIONS AND REGULATORY CONTROLS FOR AN OPEN CYCLE GAS TURBINE PLANT

Air Quality Impact Assessment Requirements

At a minimum, the DECC requires the following information to be included in the Air Quality Impact Assessment.

1. Site plan

A site plan should be provided which clearly details the following information:

- Layout of the site clearly showing all existing and proposed unit operations;
- All emissions sources clearly identified;
- Plant boundary;
- Sensitive receptors (eg. nearest residences); and
- Topography.

2. Description of the Proposal

A detailed description of the proposed process should be provided. This description should include a detailed discussion of all unit operations to be carried out at the site and a process flow diagram. A detailed list of all raw materials used in the process should be provided.

Plans, process flow diagrams and descriptions should be provided which clearly identify and explain all proposed pollution control equipment and pollution control techniques for all processes on the premises. All aspects of the proposed air emission control system should be described and discussed, with particular regard to any fugitive emission capture (eg. hooding, ducting), treatment (eg. scrubbers, bag filters etc) and discharge systems (eg. stack).

A manufacturers performance guarantee or similar should be provided for all air emission control equipment. The guarantee should include items such as pollutant removal efficiency and pollutant emission rates for all relevant air pollutants (eg. Clean Air (Plant & Equipment) Regulation 1997 pollutants and other pollutants of concern).

Details should be provided on proposed measures to continuously monitor all relevant air pollution control equipment parameters (eg. for a bag filter, these may include an opacity and bag breakage monitor) to ensure efficient operation under all operating conditions.

All potential emission sources should be identified and discussed. Detail should be provided regarding the expected parameters of all potential emission sources i.e. location, release type (stack, volume or area) and release parameters (eg. stack height, stack diameter, exhaust velocity, temperature, emission rate).

3. Local Meteorology

A detailed discussion of the prevailing dispersion meteorology at the proposed site should be provided. The report should typically include wind rose diagrams and an analysis of wind speed, wind direction, stability class, ambient temperature and joint frequency distributions of the various meteorological parameters.

A description of the techniques used to prepare the meteorological data into a format for use in the dispersion modelling should be provided.

A QA/QC analysis of the meteorological data used in the dispersion modelling should be provided. Any relevant results of this analysis should be provided and discussed.

The meteorological data used in the dispersion modelling should be supplied in a suitable electronic format.

4. Existing Ambient Air Quality

The existing ambient air quality in the vicinity of the proposal should be characterised and discussed.

5. Emission Inventory

The methodology used to calculate the expected pollutant emission rates for each source should be discussed in detail. All supporting source emission test reports and calculations relating to these emission rates should be provided.

The emission inventory should be supported with the following information:

- All supporting source emission test reports;
- Methodologies used to sample and analyse for each of the pollutants considered;
- Detailed pollutant emission rate calculations for each source; and
- A table showing all stack and fugitive source release parameters (eg. temperature, exit velocity, stack dimensions and emission rates).

6. Regulatory Requirements

A detailed comparison of the expected emission concentrations for each pollutant from all proposed emission sources with the relevant standards of concentration prescribed by the Protection of the Environment Operations (Clean Air) Regulation 2002 should be provided. Specific NOx and particulate limits for electricity generation plants are described in Table 1.

Table 1
Protection of the Environment Operations (Clean Air) Regulation 2002, Schedule 3
Emission Limits

Pollutant	Regulation Limit
NO_x (Gas Turbine, gas fuel) total electricity generating capacity of 30MW or more	70 mg/Nm^3 (as NO_2)
Solid Particles	50 mg/Nm^3

While the Protection of the Environment Operations (Clean Air) Regulation 2002 specifies the maximum allowable emission levels, the DEC may specify more stringent emission limits for specific pollutants in any recommended conditions of consent (and environment protection licence requirements) to ensure necessary performance based environmental outcomes are achieved.

7. Air Quality Impact Assessment Criteria

The air quality impact assessment should use the following criteria (where relevant) to determine the potential air quality impact of the proposal at any location beyond the boundary of the premises.

Table 2: National Environment Protection Measure for Ambient Air Quality (ANEPM)

Pollutant	Averaging Period	Concentration
SO_2	1 hour	20 pphm
SO_2	24 hour	8 pphm
SO_2	Annual average	2 pphm
NO_2	1 hour	12 pphm
NO_2	Annual average	3 pphm
*PM_{10}	24 hour	50 µg/m^3
CO	8 hour	9 ppm
Lead	1 year	0.5 µg/m^3

*PM_{10} is the suspended particulate matter, which has a diameter of less than 10 µm

Dust Amenity Criteria

During the construction and operational phase of the project, impacts on amenity due to emissions of particulate matter will need to be effectively managed. The dust deposition and total suspended particulate (TSP) criteria currently noted by the DEC are outlined in Table 3. Both criteria are annual averages for total solids and apply to sensitive receptors (eg at nearby residences or schools). The criteria do not generally apply within the boundaries of premises. These criteria should be used as a guide to determine whether amenity impacts are likely to occur but not as boundary limit conditions.

Table 3

Pollutant	Averaging Period	Concentration	Organisation
TSP	Annual average	90 $\mu g/m^3$	NH&MRC**
Dust	Annual average of Monthly Depositions	4 g/m^2/month	SPCC**

Ambient Air Quality Goals ***noted* by NSW DEC

8. Dispersion Modelling

The cumulative impact of all proposed sources at the premises should be determined by dispersion modelling. The existing ambient air quality in the vicinity of the proposal should be accounted for in the assessment of potential impacts.

A detailed discussion should be provided of air quality impacts for all relevant pollutants, based upon predicted ground level concentrations (glcs) at the plant boundary and beyond and at all sensitive receptors. The discussion should include all parameters used in the modelling and the manner in which topography, building wake effects and other site-specific peculiarities, which may effect plume dispersion, have been treated. The report should also include glc isopleths (contours) and tables summarising the predicted concentrations at sensitive receptors.

All input, output and meteorological files used in the dispersion modelling should be supplied in hard copy and suitable electronic format.

Attachment 3

List of threatened entities to be assessed by the Environmental Assessment

COMMON NAME	SCIENTIFIC NAME
Barking Owl	*Ninox connivens*
Box Gum Woodland	*White Box, Yellow Box, Blakely's Red Gum Woodland*
Brown Treecreeper (eastern subspecies)	*Cimacteris picumnus victoriae*
Button Wrinklewort	*Rutidosis leptorrhynchoides*
Diamond Firetail	*Stagonopleura guttata*
Doubletail Buttercup	*Diuris aequalis*
Eastern False Pipistrelle	*Falsistrellus tasmaniensis*
Glossy Black-Cockatoo	*Calyptorhynchus lathami*
Hooded Robin (south eastern form)	*Melanodryas cucullate cucullata*
Koala	*Phascolarctos cinereus*
Large Eared Pied Bat	*Chalinolobus dwyeri*
Large-footed Myotis	*Myotis adversus*
Masked Owl	*Tyto novaehollandiae*
Pink-tailed Worm-lizard	*Aprasia parapulchella*
Powerful Owl	*Ninox strenua*
Regent Honeyeater	*Xanthomyza phrygia*
Rosenberg's Goanna	*Varanus rosenbergi*
Speckled Warbler	*Pyrrholaemus sagittatus*
Spotted-tailed Quoll	*Dasyurus maculatus*
Squirrel Glider	*Petaurus norfolcensis*
Swift Parrot	*Lathamus discolor*
Turquoise Parrot	*Neophema pulchella*

Attachment 4

Guidance Material
Assessing Environmental Impacts

Water quality

- National Water Quality Management Strategy: Australia and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000)
- NWQMS Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC 2000)
- Healthy Rivers Commission Audit Report into the Hawkesbury Nepean River System.
- The relevant targets within the State Water Management Outcomes Plan

Wastewater and Recycling

- Environmental Guidelines for the Utilisation of Treated Effluent by Irrigation (NSW DEC 2004)
- Environment and Health Protection Guidelines: 'Onsite Sewage Management for Single Households', February 1998 (Silver Book).
- National Guidelines for Water Recycling – Managing Health and Environmental Risks – Impact Assessment http://www.ephc.gov.au/ephc/water_recycling.html
- National Water Quality Management Strategy - Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1) - November 2006 http://www.ephc.gov.au/ephc/water_recycling.html

Stormwater

- Managing Urban Stormwater: Soils and Construction (NSW Landcom, 2004)
- Managing Urban Stormwater: Source Control (EPA 1998)
- Managing Urban Stormwater: Treatment Techniques (EPA 1998).

(Note: some of these documents will be revised in 2006)

Contaminated Land

- Managing Land Contamination: Planning Guidelines - SEPP55 - Remediation of Land, Department of Urban Affairs and Planning and NSW EPA, 1998:
- Contaminated Sites – Guidelines for Consultants Reporting on Contaminated Sites (Environment Protection Authority (EPA) 1997);
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Noise and vibration

- NSW Industrial Noise Policy (EPA, 2000)
- NSW Environmental Criteria for Road Traffic Noise (EPA, 1999)
- Environmental Noise Management Manual (RTA, 2001)

Assessing Threatened Species Impacts

- Draft Guidelines For Threatened Species Assessment - Available from Department of Planning.

Assessing Aboriginal Cultural Heritage Impacts

- Draft Guidelines For Aboriginal Cultural Heritage Impact Assessment and Community Consultation - Available from Dept of Planning
- Interim Community Consultation Requirements for Applicants
- http://www3.environment.nsw.gov.au/npws.nsf/Content/Protecting+Aboriginal+objects+and+places
- Aboriginal Cultural Heritage Standards and Guidelines Kit - Available shortly on-line through DEC's webpage.

Waste

- Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes – Available from the Department of Environment and Conservation.

Environmental Assessment Requirements (EAR) for Marulan Gas Turbine Facility- (MP 07_0175)

Attachment 1

Specific Information required by the DECC

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- The assessment of project emissions should include direct emissions (ie, those occurring on the project site), indirect emissions (eg those offsite as a result of the project, such as through electricity use) and any significant upstream and/or downstream emissions associated with the project.
- The emissions should be estimated using an appropriate methodology, in accordance with the Department of Planning's Draft "*Guidelines: Energy and Greenhouse in EIA*" (2002) and the Australian Greenhouse Office's "*Factors and Methods Workbook*" (2006).
- Emissions should be compared in the EA against:

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- The quantities of water required for the site such as washdown and personal use. The environmental assessment should also examine water requirements for the proposed Stage 2 which involves the introduction of a steam turbine to utilise waste heat.

- The sources of water to be delivered to the site including river off-takes, mains water, recycled effluent and industrial sources.

- The DECC supports proposals to reuse industrial effluents, for example as feed water at the plant, where it is safe and practicable to do so and it provides the best environmental outcome. Pre-treatment of these water sources may however be required to render the water suitable for use in a Power Station. Depending on the source of the water, pre-treatment may be needed to avoid process, environmental, human health and/or localised amenity problems. For example, from a process point of view, secondary treated municipal sewage may require pre-treatment to remove calcium and magnesium, and thereby reduce

the risk of excessive scaling or further disinfection to reduce health risks to employees working at the Power Plant. For guidance on water quality requirements, refer to *Guidelines for Sewerage Systems: Use of Reclaimed Water*, November 2000, ARMCANZ et al and ANZECC criteria.

- If it is proposed to build an amenities block for site employees, the environmental assessment should describe the sewage treatment and effluent management system, estimate the quantity and quality of the effluent, and describe the proposed method of disposal. If land irrigation is proposed (on-site or elsewhere), the environmental assessment should demonstrate by way of water balance and land capability assessment that the effluent management system is sustainable and will not result in pollution of water courses or groundwater. Further guidance is available in the DECC guideline *Use of Effluent by Irrigation*, (March 2005) and Department of Local Government "*On-site Sewage Management for Single Households* (Feb 1998).

- In addition to process wastewaters and to discharges from the on-site sewerage system, the environmental assessment should describe measures for dealing with the following water pollution issues:
  - Measures to control erosion and sedimentation during construction activities, including construction of the gas supply and water supply/discharge pipelines. Further guidance is available in the guideline *Managing Urban Stormwater - Soils and Construction"*, NSW Landcom, Fourth Edition, March 2004
  - Measures to capture and treat stormwater runoff from the site during the operational phase.
  - Sealing areas of the site to prevent soil erosion.
  - Spillage controls and bunding for materials used onsite, in particular any biocides and other chemicals used to treat the process water and/or wastewaters prior to discharge.

4. Noise Issues

The environmental assessment should identify all potential noise sources and describe the extent to which noise emissions are likely to impact on any residential and/or other sensitive receivers in the vicinity of the site. The EPA publication *New South Wales Industrial Noise Policy* provides the methodology and assessment criteria applied by the EPA to assess the impacts and to determine project-specific noise planning levels. The environmental assessment should include a noise impact assessment in accordance with this Policy.

The noise impact assessment should take into account both the construction and operational phases of the development (including noise from the transmission equipment onsite), clearly specify the proposed hours of operation for both phases, and take into account adverse weather conditions including temperature inversions. Sound power levels (measured or estimated) for all plant and equipment should be clearly stated and justified. There should be an assessment of cumulative noise impacts, having regard to any other developments existing and/or approved for the locality. Where adverse noise impacts are predicted, the impact assessment should provide details on proposed noise control measures.

Road transport to and from the premises has the potential to increase disturbance at residential properties along private or public haulage routes. To assess the extent of the impact, the noise impact assessment should identify the transport route(s) to be used, the hours of operation, anticipated traffic movements, and expected increase in noise levels. The publication *Environmental Criteria for Road Traffic Noise* (EPA, 1999) describes the methods generally

applied by the DEC to determine noise planning levels for road traffic noise in locations of varying sensitivity.

The method, data and assumptions used to assess the impact of road haulage on residential properties must be fully documented and justified. Where disturbance due to road transport is likely to exceed the recommended criteria, the environmental assessment must describe the measures proposed to mitigate the impacts and the extent to which the measures are likely to be effective in achieving the relevant criteria.

5. Waste Issues

The environmental assessment should describe all wastes that will be generated by the proposal including, for each of the main waste streams, the process from which it will be generated; its quantity and composition; its classification under the Protection of the Environment Operations Act 1997; and the proposed arrangements for dealing with the waste.

Guidance on waste classification and management issues can be obtained from the publication *Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes* (EPA, 1999). The environmental assessment should clearly identify methods of reducing waste volumes and recycling and reusing wherever possible.

The avenues for disposal of industrial/hazardous waste are limited within New South Wales at present and the proponent should detail the likelihood of generation of these wastes and anticipated storage/disposal methods.

The environmental assessment must identify any fuel or chemical storage areas to be established on the site and describe the measures proposed to minimise the potential for leakage or migration of pollutants into the soil, groundwater or surface water systems.

6. Other Construction Phase Issues

The impacts of any specific activities involved in site preparation should be identified. Details of appropriate erosion and sediment controls, and dust and noise controls should be included in the environmental assessment.

All areas disturbed during construction which are not included in the working area of the plant must be revegetated to a high standard.

The likelihood of disturbing acid sulphate soils and /or pre-existing site contamination during the construction phase must be detailed in the environmental assessment and, where applicable, contingency plans must be proposed for management of acid sulphate or contaminated soils.

7. Monitoring Programs

The environmental assessment should specify and assess all monitoring programs for measuring noise, air quality and water quality monitoring during the construction phase and on-going operation of the facility. These monitoring programs should be capable of assessing whether or not the development achieves a satisfactory level of environmental performance. The evaluation should include a detailed description of the monitoring strategies, sample analysis methods and the level of reporting proposed.

8. Community Consultation

The environmental assessment should ~~outline~~ procedures for responding to breaches of environmental conditions and for reporting these incidents both to the regulatory agencies and to the community. This includes complaint handling mechanisms and emergency response procedures.

9. Contaminated Land

The environmental assessment must document the management of any land contamination. This includes ensuring that land is not allowed to be put to a use that is inappropriate because of the presence of contamination, and incorporates mechanisms to ensure that:

- planning authorities consider contamination issues when they are making development decisions;
- local councils provide information about land contamination on planning certificates that they issue under section 149 of the Environmental Planning & Assessment Act; and
- Land remediation is facilitated and controlled through State Environmental Planning Policy 55 – Remediation of Land (SEPP55).

The following documents should form the basis for the contaminated land assessment for the proposed development:

- Managing Land Contamination: Planning Guidelines - SEPP55 - Remediation of Land, Department of Urban Affairs and Planning and NSW EPA, 1998:
- Contaminated Sites – Guidelines for Consultants Reporting on Contaminated Sites (Environment Protection Authority (EPA) 1997);
- Contaminated Sites – Guidelines on Significant Risk of Harm and Duty to Report (EPA, 1999).

10. Impacts of the project on threatened species and their habitat

A field survey of the site must be conducted and documented in accordance with the draft "Guidelines for Threatened Species Assessment" (Refer to DoP).

Likely direct and indirect impacts on threatened species and their habitats must be assessed, evaluated and reported, including those that may arise from any upgrading of Canyonleigh Road, the pipeline and joint offsite infrastructure. The assessment must specifically report on the considerations listed in Step 3 of the draft guidelines.

The EA must clearly state whether it meets each of the key thresholds set out in Step 5 of the draft guidelines and describe the actions that will be taken to avoid or mitigate impacts or provide appropriately calculated offsets to compensate for the impacts of the project on threatened species and their habitats. This must include an assessment of the effectiveness and reliability of the offset and impact mitigation measures and any residual impacts after these measures are implemented.

The EA must assess the impacts on woodland birds, orchids, White Box Yellow Box Blakely's Red Gum Woodland endangered ecological community (EEC), and hollow-dependent gliders, bats and birds. Attachment 3 provides a list of relevant threatened entities to be assessed for this project. When assessing the EEC consideration must be given to the DECC Box-Gum Woodland Identification Guidelines, and particularly to any potential occurrences of secondary

grassland derived from the past clearing of the EEC. Advice on these identification guidelines should be sought by the proponent from DECC.

Offsets may need to be provided for clearing associated with the proposal and the EA should demonstrate the calculation of these offsets. Identified offsets must be verified as part of the EA and the ability of the proponent to secure the offsets must be demonstrated. The proponent should consider the revegetation of a wide riparian/habitat corridor along the Wollondilly River as a component of the offset requirements. The required offsets must be incorporated into the Statement of Commitments.

11. Impacts of the project on Aboriginal cultural heritage values

The EA should address and document the information requirements set out in the draft "Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation" available from Dept of Planning involving surveys and consultation with the Aboriginal community.

The EA must identify the nature and extent of impacts on Aboriginal cultural heritage values across the project area. Accordingly, the EA must describe the actions that will be taken to avoid or mitigate impacts or compensate to prevent unavoidable impacts of the project on Aboriginal cultural heritage values. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.

The EA needs to clearly demonstrate that effective community consultation with Aboriginal communities has been undertaken in determining and assessing impacts, developing options and making final recommendations.

Attachment 2

AIR EMISSIONS AND REGULATORY CONTROLS FOR AN OPEN CYCLE GAS TURBINE PLANT

Air Quality Impact Assessment Requirements

At a minimum, the DECC requires the following information to be included in the Air Quality Impact Assessment.

1. Site plan

A site plan should be provided which clearly details the following information:

- Layout of the site clearly showing all existing and proposed unit operations;
- All emissions sources clearly identified;
- Plant boundary;
- Sensitive receptors (eg. nearest residences); and
- Topography.

2. Description of the Proposal

A detailed description of the proposed process should be provided. This description should include a detailed discussion of all unit operations to be carried out at the site and a process flow diagram. A detailed list of all raw materials used in the process should be provided.

Plans, process flow diagrams and descriptions should be provided which clearly identify and explain all proposed pollution control equipment and pollution control techniques for all processes on the premises. All aspects of the proposed air emission control system should be described and discussed, with particular regard to any fugitive emission capture (eg. hooding, ducting), treatment (eg. scrubbers, bag filters etc) and discharge systems (eg. stack).

A manufacturers performance guarantee or similar should be provided for all air emission control equipment. The guarantee should include items such as pollutant removal efficiency and pollutant emission rates for all relevant air pollutants (eg. Clean Air (Plant & Equipment) Regulation 1997 pollutants and other pollutants of concern).

Details should be provided on proposed measures to continuously monitor all relevant air pollution control equipment parameters (eg. for a bag filter, these may include an opacity and bag breakage monitor) to ensure efficient operation under all operating conditions.

All potential emission sources should be identified and discussed. Detail should be provided regarding the expected parameters of all potential emission sources i.e. location, release type (stack, volume or area) and release parameters (eg. stack height, stack diameter, exhaust velocity, temperature, emission rate).

3. Local Meteorology

A detailed discussion of the prevailing dispersion meteorology at the proposed site should be provided. The report should typically include wind rose diagrams and an analysis of wind speed, wind direction, stability class, ambient temperature and joint frequency distributions of the various meteorological parameters.

A description of the techniques used to prepare the meteorological data into a format for use in the dispersion modelling should be provided.

A QA/QC analysis of the meteorological data used in the dispersion modelling should be provided. Any relevant results of this analysis should be provided and discussed.

The meteorological data used in the dispersion modelling should be supplied in a suitable electronic format.

4. Existing Ambient Air Quality

The existing ambient air quality in the vicinity of the proposal should be characterised and discussed.

5. Emission Inventory

The methodology used to calculate the expected pollutant emission rates for each source should be discussed in detail. All supporting source emission test reports and calculations relating to these emission rates should be provided.

The emission inventory should be supported with the following information:

- All supporting source emission test reports;
- Methodologies used to sample and analyse for each of the pollutants considered;
- Detailed pollutant emission rate calculations for each source; and
- A table showing all stack and fugitive source release parameters (eg. temperature, exit velocity, stack dimensions and emission rates).

6. Regulatory Requirements

A detailed comparison of the expected emission concentrations for each pollutant from all proposed emission sources with the relevant standards of concentration prescribed by the Protection of the Environment Operations (Clean Air) Regulation 2002 should be provided. Specific NOx and particulate limits for electricity generation plants are described in Table 1.

Table 1
Protection of the Environment Operations (Clean Air) Regulation 2002, Schedule 3
Emission Limits

Pollutant	Regulation Limit
NO_x (Gas Turbine, gas fuel) total electricity generating capacity of 30MW or more	70 mg/Nm^3 (as NO_2)
Solid Particles	50 mg/Nm^3

While the Protection of the Environment Operations (Clean Air) Regulation 2002 specifies the maximum allowable emission levels, the DEC may specify more stringent emission limits for specific pollutants in any recommended conditions of consent (and environment protection licence requirements) to ensure necessary performance based environmental outcomes are achieved.

7. Air Quality Impact Assessment Criteria

The air quality impact assessment should use the following criteria (where relevant) to determine the potential air quality impact of the proposal at any location beyond the boundary of the premises.

Table 2: National Environment Protection Measure for Ambient Air Quality (ANEPM)

Pollutant	Averaging Period	Concentration
SO_2	1 hour	20 pphm
SO_2	24 hour	8 pphm
SO_2	Annual average	2 pphm
NO_2	1 hour	12 pphm
NO_2	Annual average	3 pphm
*PM_{10}	24 hour	50 µg/m^3
CO	8 hour	9 ppm
Lead	1 year	0.5 µg/m^3

*PM_{10} is the suspended particulate matter, which has a diameter of less than 10 µm

Dust Amenity Criteria

During the construction and operational phase of the project, impacts on amenity due to emissions of particulate matter will need to be effectively managed. The dust deposition and total suspended particulate (TSP) criteria currently noted by the DEC are outlined in Table 3. Both criteria are annual averages for total solids and apply to sensitive receptors (eg at nearby residences or schools). The criteria do not generally apply within the boundaries of premises. These criteria should be used as a guide to determine whether amenity impacts are likely to occur but not as boundary limit conditions.

Table 3

Pollutant	Averaging Period	Concentration	Organisation
TSP	Annual average	90 $\mu g/m^3$	NH&MRC**
Dust	Annual average of Monthly Depositions	4 g/m^2/month	SPCC**

Ambient Air Quality Goals ***noted* by NSW DEC

8. Dispersion Modelling

The cumulative impact of all proposed sources at the premises should be determined by dispersion modelling. The existing ambient air quality in the vicinity of the proposal should be accounted for in the assessment of potential impacts.

A detailed discussion should be provided of air quality impacts for all relevant pollutants, based upon predicted ground level concentrations (glcs) at the plant boundary and beyond and at all sensitive receptors. The discussion should include all parameters used in the modelling and the manner in which topography, building wake effects and other site-specific peculiarities, which may effect plume dispersion, have been treated. The report should also include glc isopleths (contours) and tables summarising the predicted concentrations at sensitive receptors.

All input, output and meteorological files used in the dispersion modelling should be supplied in hard copy and suitable electronic format.

Attachment 3

List of threatened entities to be assessed by the Environmental Assessment

COMMON NAME	SCIENTIFIC NAME
Barking Owl	*Ninox connivens*
Box Gum Woodland	*White Box, Yellow Box, Blakely's Red Gum Woodland*
Brown Treecreeper (eastern subspecies)	*Cimacteris picumnus victoriae*
Button Wrinklewort	*Rutidosis leptorrhynchoides*
Diamond Firetail	*Stagonopleura guttata*
Doubletail Buttercup	*Diuris aequalis*
Eastern False Pipistrelle	*Falsistrellus tasmaniensis*
Glossy Black-Cockatoo	*Calyptorhynchus lathami*
Hooded Robin (south eastern form)	*Melanodryas cucullate cucullata*
Koala	*Phascolarctos cinereus*
Large Eared Pied Bat	*Chalinolobus dwyeri*
Large-footed Myotis	*Myotis adversus*
Masked Owl	*Tyto novaehollandiae*
Pink-tailed Worm-lizard	*Aprasia parapulchella*
Powerful Owl	*Ninox strenua*
Regent Honeyeater	*Xanthomyza phrygia*
Rosenberg's Goanna	*Varanus rosenbergi*
Speckled Warbler	*Pyrrholaemus sagittatus*
Spotted-tailed Quoll	*Dasyurus maculatus*
Squirrel Glider	*Petaurus norfolcensis*
Swift Parrot	*Lathamus discolor*
Turquoise Parrot	*Neophema pulchella*

Attachment 4

Guidance Material
Assessing Environmental Impacts

Water quality

- National Water Quality Management Strategy: Australia and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000)
- NWQMS Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC 2000)
- Healthy Rivers Commission Audit Report into the Hawkesbury Nepean River System.
- The relevant targets within the State Water Management Outcomes Plan

Wastewater and Recycling

- Environmental Guidelines for the Utilisation of Treated Effluent by Irrigation (NSW DEC 2004)
- Environment and Health Protection Guidelines: 'Onsite Sewage Management for Single Households', February 1998 (Silver Book).
- National Guidelines for Water Recycling – Managing Health and Environmental Risks – Impact Assessment http://www.ephc.gov.au/ephc/water_recycling.html
- National Water Quality Management Strategy - Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1) - November 2006 http://www.ephc.gov.au/ephc/water_recycling.html

Stormwater

- Managing Urban Stormwater: Soils and Construction (NSW Landcom, 2004)
- Managing Urban Stormwater: Source Control (EPA 1998)
- Managing Urban Stormwater: Treatment Techniques (EPA 1998).

(Note: some of these documents will be revised in 2006)

Contaminated Land

- Managing Land Contamination: Planning Guidelines - SEPP55 - Remediation of Land, Department of Urban Affairs and Planning and NSW EPA, 1998:
- Contaminated Sites – Guidelines for Consultants Reporting on Contaminated Sites (Environment Protection Authority (EPA) 1997);
- Contaminated Sites – Guidelines on Significant Risk of Harm and Duty to Report (EPA, 1999).

Noise and vibration

- NSW Industrial Noise Policy (EPA, 2000)
- NSW Environmental Criteria for Road Traffic Noise (EPA, 1999)
- Environmental Noise Management Manual (RTA, 2001)

Assessing Threatened Species Impacts

- Draft Guidelines For Threatened Species Assessment - Available from Department of Planning.

Assessing Aboriginal Cultural Heritage Impacts

- Draft Guidelines For Aboriginal Cultural Heritage Impact Assessment and Community Consultation - Available from Dept of Planning
- Interim Community Consultation Requirements for Applicants
- http://www3.environment.nsw.gov.au/npws.nsf/Content/Protecting+Aboriginal+objects+and+places
- Aboriginal Cultural Heritage Standards and Guidelines Kit - Available shortly on-line through DEC's webpage.

Waste

- Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes – Available from the Department of Environment and Conservation.

Dinuka McKenzie - DGR's for Marulan Gas Fired Power Stations

From: Darren Wallett
To: Neville Osborne
Date: 18/01/2008 08:16
Subject: DGR's for Marulan Gas Fired Power Stations
CC: Dinuka McKenzie; Mark Mignanelli; peter.lansdown@dwe.nsw.gov.au
Attachments: Marulan Power Stations DGR's.doc

Hi Neville,

I have attached the DWE (water) requirements for inclusion in the DGR's for the Gas Fired Power Stations at Marulan. I apologise that this does not include any DWE (energy) requirements (particularly for the proposed pipeline). These requirements will be provided by Peter Lansdown from the energy side of DWE.

I would request that Dinuka Liaise directly with Peter in this instance, as I start five weeks leave this afternoon and Peter is not in the office until next week. Peter may be able to simply add any energy requirements on this response and forward it to yourselves upon his return.

Again I apologise for the inconvenience, in future I will include both water and energy requirements.

If you require a hard copy of the requirements let me know.

Cheers Darren.

Darren J Wallett

Planning Coordinator-Southern Central
Major Projects and Planning
NSW Department of Water and Energy

PO Box 5336
Wagga Wagga NSW 2650
Ph 0269 329119
Mobile 0427 274 283
Email darren.wallett@dnr.nsw.gov.au

Dinuka McKenzie - FW: DGR's for Marulan Gas Fired Power Stations

From: "Peter Lansdown" <peter.lansdown@dwe.nsw.gov.au>
To: <Dinuka.McKenzie@planning.nsw.gov.au>
Date: 21/01/2008 15:59
Subject: FW: DGR's for Marulan Gas Fired Power Stations
CC: "Neville Osborne" <Neville.Osborne@planning.nsw.gov.au>, <darren.wallett@dnr.nsw.gov.au>
Attachments: Marulan Power Stations DGR's.doc

Dinuka,

The only requirement from the Energy side of DWE will be that the proposed pipeline is licensed under the *Pipelines Act 1967*. I understand that there is commitment to that process from the proponents but would like to see it as a condition of approval of the proposed concept and project approval stages.

That process will facilitate the proponent's need to secure land for the proposed route and provide a robust safety and operating regime for the design, construction, commissioning and ongoing operation of the pipeline.

As discussed informally at the Planning Focus Meeting, I have offered to meet with the EnergyAustralia representatives to ensure there is an understanding of the licensing processes. That should minimize any delays to the project that might result from a lack of understanding.

Peter Lansdown
Manager, Energy Networks Compliance
Department of Water and Energy

Tel: (02) 8281 7739
Fax: (02) 8281 7355
Mob: 0437 895 319
Email: peter.lansdown@dwe.nsw.gov.au

From: Darren Wallett [mailto:Darren.Wallett@dnr.nsw.gov.au]
Sent: Friday, 18 January 2008 8:16 AM
To: Neville Osborne
Cc: Mark Mignanelli; Peter Lansdown; Dinuka McKenzie
Subject: DGR's for Marulan Gas Fired Power Stations

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If you require a hard copy of the requirements let me know.

Cheers Darren.

Darren J Wallett

Planning Coordinator-Southern Central
Major Projects and Planning
NSW Department of Water and Energy

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NSW Government

Department of Water & Energy

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Fax: (02) 6932 9 110
Email: darren.wallett@dnr.nsw.gov.au

Mr Neville Osborne
Manager, Water and Energy
Major Infrastructure Assessment
NSW Department of Planning
GPO Box39
SYDNEY NSW 2001

Our Ref: ER7557
Your Ref: 9042594

18 January 2008

Dear Mr Osborne,

RE: Marulan Gas Fired Power Stations- Request for Key Issues and Assessment Requirements

I refer to your letter of 19th December 2007 requesting key issues and assessment requirements of the Department of Water and Energy (DWE) to incorporate in Director General's Requirements in relation to the preparation of an Environmental Assessment (EA) for the proposed Marulan Gas Fired Power Stations, Goulburn-Mulwaree Local Government Area.

The Department has highlighted the key issues and assessment requirements to be addressed in Attachment A.

Further Information

Should you require further information or clarification of the points raised below, please don't hesitate to contact Darren Wallett, Planning Coordinator-Southern Central, on phone (02) 6932 9119 or 0427 274 283.

Yours sincerely

Darren Wallett
Planning Coordinator-Southern Central
Major Projects and Planning

Attachment A-Key Issues and Assessment Requirements

Relevant Legislation

The assessment is required to take into account the objectives and regulatory requirements of the following legislation (administered by DWE), as applicable:

- *Water Act 1912*
- *Water Management Act 2000 (WMA)*
- *Rivers and Foreshores Improvement Act 1948*

Water Sharing Plans

Gazetted Water Sharing Plans (WSPs) prepared under the provisions of the *WMA* establish rules for access to, and the sharing of water between the environmental needs of the surface or groundwater source and water users. If the proposal is within a gazetted WSP area the assessment is required to demonstrate consistency with the rules of the WSP. For information refer to: http://www.dnr.nsw.gov.au/water/plans.shtml

Relevant Policies

The assessment is required to take into account the following NSW Government policies, as applicable:

- NSW Groundwater Policy Framework Document - General
- NSW Groundwater Quantity Management Policy
- NSW Groundwater Quality Protection Policy
- NSW Groundwater Dependent Ecosystem Policy
- NSW State Rivers and Estuaries Policy
- NSW Sand and Gravel Extraction Policy for Non-Tidal Rivers
- NSW Wetlands Management Policy
- NSW Farm Dams Policy
- NSW Weirs Policy

Groundwater

DWE is responsible for the management of the groundwater resources so they can sustain environmental, social and economic uses for the people of New South Wales.

Groundwater Source

The assessment is required to identify groundwater issues and potential degradation to the groundwater source and provide the following:

- Details of the predicted highest groundwater table at the development site.
- Details of any works likely to intercept, connect with or infiltrate the groundwater sources.
- Details of any proposed groundwater extraction, including purpose, location and construction details of all proposed bores and expected annual extraction volumes.
- Describe the flow directions and rates and the physical and chemical characteristics of the groundwater source.
- Details of the predicted impacts of any final landform on the groundwater regime.
- Details of the existing groundwater users within the area (including the environment) and include details of any potential impacts on these users.
- Assessment of the quality of the groundwater for the local groundwater catchment.
- Details of how the proposed development will not potentially diminish the current quality of groundwater, both in the short and long term.
- Details on preventing groundwater pollution so that remediation is not required.
- Details on protective measures for any groundwater dependent ecosystems (GDEs).
- Details of proposed methods of the disposal of waste water and approval from the relevant authority.
- Assessment of the need for an Acid Sulfate Management Plan (prepared in accordance with ASSMAC guidelines).
- Assessment of the potential for saline intrusion of the groundwater and measures to prevent such intrusion into the groundwater aquifer.
- Details of the results of any models or predictive tools used.

Where potential impact/s are identified the assessment will need to identify limits to the level of impact and contingency measures that would remediate, reduce or manage potential impacts to the existing groundwater resource and any dependent groundwater environment or water users, including information on:

- Details of any proposed monitoring programs, including water levels and quality data.
- Reporting procedures for any monitoring program including mechanism for transfer of information.
- An assessment of any groundwater source/aquifer that may be sterilised as a consequence of the proposal.
- Identification of any nominal thresholds as to the level of impact beyond which remedial measures or contingency plans would be initiated (this may entail water level triggers or a beneficial use category).
- Description of the remedial measures or contingency plans proposed.
- Any funding assurances covering the anticipated post development maintenance cost, for example on-going groundwater monitoring for the nominated period.

Licensing

All proposed groundwater works, including bores for the purpose of investigation, extraction, dewatering, testing or monitoring must be identified in the proposal and an approval obtained from DWE prior to their installation.

Groundwater Dependent Ecosystems

The assessment is required to identify any impacts on GDEs.

GDEs are ecosystems which have their species composition and natural ecological processes wholly or partially determined by groundwater. GDEs represent a vital component of the natural environment. GDEs can vary dramatically in how they depend on groundwater from having occasional or no apparent dependence through to being entirely dependent. GDEs occur across both the surface and subsurface landscapes ranging in area from a few metres to many kilometres. Increasingly, it is being recognised that surface and groundwaters are often interlinked and aquatic ecosystems may have a dependence on both.

Ecosystems that can depend on groundwater and that may support threatened or endangered species, communities and populations, include:

- Terrestrial vegetation that show seasonal or episodic reliance on groundwater.
- River base flow systems which are aquatic and riparian ecosystems in or adjacent to streams/rivers dependent on the input of groundwater to base flows.
- Aquifer and cave ecosystems.
- Wetlands.
- Estuarine and near-shore marine discharge ecosystems.
- Fauna which directly depend on groundwater as a source of drinking water or that live within water which provide a source.

The NSW Groundwater Dependent Ecosystem Policy provides guidance on the protection and management of GDEs. It sets out management objectives and principles to:

- Ensure the most vulnerable and valuable ecosystems are protected.
- Manage groundwater extraction within defined limits thereby providing flow sufficient to sustain ecological processes and maintain biodiversity.
- Ensure sufficient groundwater of suitable quality is available to ecosystems when needed.
- Ensure the *precautionary principle* is applied to protect GDEs, particularly the dynamics of flow and availability and the species reliant on these attributes.

A number of gazetted WSP's, list and map priority GDEs, and set out the management strategies and actions for sharing and protecting groundwater quality, quantity and dependent ecosystems.

Surface Waters
DWE is responsible for the sustainable management of rivers, estuaries, wetlands and adjacent riverine plains.

Watercourse/Riparian
The assessment is required to consider the impact of the proposal on the watercourses and associated riparian vegetation within the site and provide the following:

- Identify the sources of surface water.
- Details of stream order (using the Strahler System).
- Details of any proposed surface water extraction, including purpose, location of existing pumps, dams, diversions, cuttings and levees.
- Detailed description of any proposed development or diversion works including all construction, clearing, draining, excavation and filling.
- An evaluation of the proposed methods of excavation, construction and material placement.
- A detailed description of all potential environmental impacts of any proposed development in terms of vegetation, sediment movement, water quality and hydraulic regime.
- A description of the design features and measures to be incorporated into any proposed development to guard against long term actual and potential environmental disturbances, particularly in respect of maintaining the natural hydrological regime and sediment movement patterns and the identification of riparian buffers.
- Details of the impact on water quality and remedial measures proposed to address any possible adverse effects.

Water Management Structures/Dams
DWE is responsible for the management and licensing of these structures under water legislation.

If the proposal includes existing or proposed water management structures/dams, the assessment is required to provide information on the following:

- Date of construction (for existing structure/s).
- Details of the legal status/approval for existing structure/s.
- Details of any proposal to change the purpose of existing structure/s.
- Details if any remedial work is required to maintain the integrity of the existing structure/s.
- Clarification if the structure/s is on a watercourse.
- Details of the purpose, location and design specifications for the structure/s.
- Size and storage capacity of the structure/s.
- Calculation of the Maximum Harvestable Right Dam Capacity (MHRDC).
- Details if the structure/s is affected by flood flows.
- Details of any proposal for shared use, rights and entitlement of the structure/s.
- Details if the proposed development/subdivision has the potential to bisect the structure/s.

DWE's Farm Dams Assessment Guide provides details on harvestable rights and the calculation of the MHRDC. For information refer to:
http://www.naturalresources.nsw.gov.au/water/farm_dams/index.shtml

Basic Landholder Rights
The *WMA* identifies Basic Landholder Rights (BLRs) for access to water whereby landholders over an aquifer or with river or lake frontage can access water for domestic (household) purposes or to water stock without the need for a water licence (although a works approval may still be required). This has the potential to impact inequitably on existing licensed water users (under a WSP) in the case where riparian frontage continues to be subdivided, creating new basic rights for water extraction.

If this is an issue for the proposal the assessment should identify any potential for creation of new BLRs along the frontage to major waterways or over any sensitive aquifers. For those subdivisions fronting rivers/lakes, innovative subdivision design which allows the creation of additional lots without direct river/lake frontage or utilises collective or community title to manage the use of any existing BLR could provide a satisfactory way of managing this issue whilst still allowing for subdivision. Subdivisions over a sensitive aquifer however, may be more limited in using this approach.

Sustainable Water Supply

Many gazetted WSPs to-date have identified particular surface and groundwater systems that are currently over-allocated (that is, water licence volumes issued to landholders operating in these catchments exceed the sustainable volumes/flows within these systems). In the case of over-allocation, the systems have subsequently been embargoed and no new water licences are to be issued within these catchments. Any new or expanded development within such catchments will therefore be unable to obtain any new water entitlements directly and will have to enter the water trading market (if available within that catchment) to seek additional water. Therefore, there can be no guarantees of obtaining additional water via this mechanism and there is the potential of restrictions on further development within such catchments.

Whilst there is provision in the *WMA* to allow for limited growth in Town Water Supplies (TWS) this could still impact subsequently on other water users.

The assessment is required to address the issue of provision of a sustainable water supply for any project proposal. The assessment should include Water Management Plans detailing how a sustainable and efficient water supply can be sourced and implemented with minimal reliance on accessing valuable surface and groundwater resources.

Through the implementation of BASIX, Integrated Water Cycle Management and Water Sensitive Urban Design, any proposed development must also be able to exhibit high water use efficiency.

SYDNEY CATCHMENT AUTHORITY

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Ref: D2007/08951

Mr Neville Osborne ✓ Dinuka
Team Leader, Energy and Water
Major Infrastructure Assessment
Department of Planning
GPO Box 39
SYDNEY NSW 2001

Dear Mr Osborne

Delta Electricity and Energy Australia - Marulan Gas Fired Power Stations

The Sydney Catchment Authority (SCA) appreciates the opportunity to provide its environmental assessment requirements for the Marulan Gas Fired Power Stations' proposal (concept plan application for the entire proposal - MP 07_0174 and applications for each of the gas turbine power plants – MP 07_0175 and MP 07_0174) The project has the potential to adversely impact on water quality. It is important the project is constructed and operated in a manner which does not adversely affect the quality of surface and ground waters beyond the boundaries of the site.

The proposal is located approximately 150 m from the Wollondilly River within the Wollondilly River sub-catchment and the Warragamba catchment that is part of the Sydney Drinking Water Catchment. As the project has been classified a Major Project to be assessed and determined under Part 3A of the *Environmental Planning and Assessment Act*, it is not formally subject to the requirements of the *Drinking Water Catchments Regional Environmental Plan No 1*. Nevertheless, the SCA considers water quality issues should be comprehensively considered in the assessment process and that this planning instrument establishes appropriate assessment criteria. The SCA considers that the environmental assessment of the proposal should include an assessment of whether the proposal will have a 'neutral or beneficial effect on water quality' both during the construction and operation stages.

The SCA agrees with the identification in the Preliminary Assessment Report (dated 14 December 2007) that flooding, surface water, and hydrology are key issues.

Taking into account the information in the Preliminary Assessment Report, information presented during the Planning Focus Meeting and site inspection on 15 January 2008, and the above, the SCA requests that the Director-General's requirements state that the Environmental Assessment (with regards to the gas turbine power facilities and the joint infrastructure including access roads, transmission lines, telecommunications and gas pipeline lateral) needs to:

- Consider the *Drinking Water Catchments Regional Environmental Plan No. 1* and have regards to the water quality objectives detailed in the plan;
- Contain relevant studies, plans (e.g. Water Cycle Management Study, Stormwater Management Plan, Erosion and Sediment Control Plan and/or Soil

and Water Management Plan) and modelling (e.g. MUSIC) that address the following:

- Include information regarding existing quality of surface and ground waters present on the site (ideally this should be determined based on sampling on the site, however, it is likely to be necessary to supplement this with information from sites with similar land uses);
- Provide details of and assess the impacts associated with development of water supply dams, use of groundwater (if any) and relocation of watercourses and drainage lines;
- Identification of potential impacts on water quality (surface and groundwater) during construction and operation stages of the proposal;
- Details of the site characteristics and identification of the likely pollutants of concern during construction and operation stages of the proposal;
- Detail the on-ground water quality protection measures during construction and operation stages of the proposal along with the performance criteria for each measure and assess whether the water quality measures are sustainable for the periods for which they are expected to be in place. The on-ground protection measures and management practices considered should be based on SCA endorsed *Current Recommended Practices (CRPs) and Standards* (listed on the SCA website www.sca.nsw.gov.au & available for inspection at the SCA Head Office at 311 High Street Penrith). Justification for measures proposed based on considerations other than SCA endorsed *CRPs and Standards* should be provided;
- For each identified pollutant of concern assess the post-activity condition in relation to the pre-activity condition in terms of load and concentration for both wet and dry weather conditions;
- Determine and state whether a neutral or beneficial effect on water quality of receiving waters (surface and groundwater) will occur during construction and operation stages of the proposal.

- Provide details of the proposal to manage general stormwater runoff and waste waters associated with operation of the gas turbines, and site office and buildings. Separation of clean and dirty water systems, optimisation of recycling, zero discharge of waste water from the sites and minimising offsite impacts on receiving waters (surface and groundwater) should be key considerations.
- With regards to soil, water, waste water and treated effluent (from the Goulburn Sewage Treatment Plant) management at the gas turbine sites, critical structures such as dams and onsite sedimentation basins should be designed, constructed and maintained to accommodate a 1 in 100 year ARI 24 hour event. The soil, water, waste water and treatment effluent management structures should be located at least 150 metres from the Wollondilly River, 100 metres from a creek or a gully and 40 metre from a drainage depression.
- Provide details of the practices and contingency measures proposed to ensure materials transported from the site by road do not spill (as solid, liquid or dust);

- Assess measures proposed to be adopted to offset impacts associated with construction activities (e.g. earthworks, vegetation clearing, track construction etc.) These measures could include improved management of the Wollondilly River and related riparian areas in the vicinity of the proposal;
- The sustainability of systems and management measures over the long term, and identification as to who will have responsibility for ongoing maintenance and operation of the joint/shared infrastructure, and the roles and responsibilities for environmental management and monitoring.

The SCA would appreciate being involved in the further assessment of the application and would appreciate being provided with copies of any subsequent environmental assessment documents. In particular the SCA requests the Director-General's Requirements to specify that the Proponent must continue to undertake consultation with the Authority.

If you wish to discuss any matter raised in this letter, please do not hesitate to contact Dr. Ravi Sundaram on 47252594 or ravi.sundaram@sca.nsw.gov.au.

Yours sincerely

18/11/08

PAUL GRIMSON
A/General Manager Environmental & Planning

GOULBURN MULWAREE COUNCIL

Civic Centre 184-194 Bourke Street Goulburn NSW
Telephone: (02) 4823 4444 • Facsimile: (02) 4823 4456 • www.goulburn.nsw.gov.au
Correspondence to: Goulburn Mulwaree Council Locked Bag 22 Goulburn NSW 2580

Contact: Planning & Community Services
Our Ref: DJ:LE
Your Ref: MP 07_0174, MP 07_0175 & MP 07_0176

16 January 2008

Dimuka

Neville Osborne
Team Leader Water and Energy
Major Infrastructure Assessment
Department of Planning
GPO Box 39
SYDNEY NSW 2001

Dear Mr Osborne

Subject: Marulan Gas Fired Power Stations
Request for Environmental Assessment Requirements

Thank you for your letter dated 19 December 2007 regarding the above project. The following comments are provided for consideration in establishing the Director General's requirements.

The highest priority issues for Council are:

- **Permissibility**

  Permissibility of the proposal including ancillary development and off-site infrastructure under the Mulwaree LEP 1995 and Goulburn Mulwaree Draft LEP 2007 (currently on exhibition).

- **Cross boundary issues**

  It is noted that the proposed development is located on the Local Government Boundary with the proposed "Marulan Site" located within the Upper Lachlan Council LGA and the majority of the existing transgrid site associated infrastructure located in the Goulburn Mulwaree LGA.

- **Hazards**

  SEPP 33
  A Preliminary Hazard Analysis should be undertaken in accordance with *State Environmental Planning Policy 33 – Hazardous and Offensive Development.*

  Flood
  Goulburn Mulwaree Council does not have any flood information for the subject site, however it is noted that the site is adjacent to the Wollondilly River, which is subject to periodic flooding. A flood assessment for the site and access should be determined in accordance with the NSW Government *Floodplain Development Manual* 2005 to ensure the site is located outside the relevant Flood Planning Level for what may be considered critical public infrastructure. It is also noted in accordance with Council's *Wollondilly River and Mulwaree Chain of Ponds Floodplain Risk Management Study and Plan* prepared by SMEC Australia Pty Ltd (March 2003) that the Probable Maximum Flood within Goulburn is approximately 640m AHD.

  Bushfire
  A review of Council records has revealed the site is "Bushfire Prone" and therefore a Bushfire Hazard Assessment is required under the NSW Rural Fire Service *Planning for Bushfire Protection* 2006.

- **Noise and Vibration**

  Assessment and modelling of the expected noise during construction and operation of the proposal should be required, particularly in relation to sensitive landuses, i.e. existing dwellings in the vicinity of the development. This should include noise emanating from the site itself, as well as traffic related noise along the transport routes. Potential impacts should also be assessed for each individual proposal as well as the cumulative impacts.

- **Climate and Air Quality**

  Assessment of air quality impacts including the modelling of emissions from exhaust stacks and a plain English summary of the results is vital. Historically, Council receives considerable objection from residents about stack emissions, and therefore basic information in layman's terms would be useful in addressing community concerns. Council also receives concerns from people sensitive to respiratory illnesses and it would be useful to include such related information. The effect of local topography and climatic conditions in affecting the drift of air and air quality from the site should also be addressed.

- **Water Supply**

  Details of the source of the water supply, storage areas and impact on the hydrology of the area. It is noted from Delta's Preliminary Environmental Assessment for Marulan Gas Turbine Facility located on their web site that the potential water source is from the Goulburn Sewage Treatment Plant. The sustainability and impacts related to the transportation of the water supply and alternate water supply sources should be assessed.

  Will the water storage area require health control measures such as mosquito vector control and the like?

- **Separation of management responsibilities between Delta Electricity, Energy Australia, and the existing Transgrid site**

  The operation and management responsibilities between all stakeholders needs to be clearly identified and any modification of existing consents outlined as part of the Environmental Assessment Report. An assessment of cumulative impacts of the developments at the site should be included to allow the community to assess the additional impacts of the proposal on the locality and responsibilities of owners during identified contingencies.

- **Views and Buffers**

  Sufficient buffer distances/setbacks should be achieved from property boundaries, public roads, watercourses/drainagelines and dwellings not associated with the proposal. Buffers and setbacks also need to be determined between the applicants and the existing facility. Details to be included in the Environmental Assessment. Views of the structure from public places and nearby dwellings will allow assessment on the visual impact of the proposal on existing dwellings, public places (Canyonleigh Road) and the landscape.

- **Community Consultation**

  The Environmental Assessment should ensure community consultation with local residents and community groups during project planning, pre-lodgement, development assessment, and operation and management. In addition the report should examine the potential impact the development will have on retaining existing rural landscapes and amenity of the area. This assessment may form the basis of a social impact assessment.

  The Environmental Assessment should also identify people and properties affected by the proposal including properties affected by the transportation of the water from the Goulburn STP (or alternative source) and measures to mitigate any social, economic or environmental impacts.

- **Water Cycle Management Plan**

  Although the proposal is not subject to assessment under *REP 1 Drinking Water Catchments*, the development should ensure the development achieves a Neutral or Beneficial Effect on Water Quality.

- **Traffic and Road Impacts**

  The Traffic Management Plan should identify proposed traffic routes, times and days of the week for transportation of the structures and any on-going water supply trucks and structural adequacy of the traffic route, including bridges and environmental management measures. The amenity impacts on the area and any mitigating measures will be of particular interest to the community.

- **Heritage and Archaeological Assessment**
  Although Council has no record of any recorded heritage items/sites, there is potential for unrecorded sites (Aboriginal and Non-Aboriginal). A Heritage Assessment (Aboriginal and Non-Aboriginal) should be prepared to assess the significance of the area and any potential impacts on the site.

- **Decommissioning**
  The Environmental Assessment should include specific commitments from the Applicant with respect to the decommissioning and dismantling of the facilities, in the event that operations cease, or that the facilities reach the end of their life span.

I would appreciate if the above matters could be incorporated into the documentation for public exhibition purposes.

Please note that Council is not consenting to the proposal and reserves its right to make a formal submission as part of the public exhibition process. To assist Council in making its submission it is important that it is aware of any community comments. Accordingly I would appreciate copies of any submissions made by residents of the Goulburn Mulwaree area.

Yours faithfully

CHRIS BERRY
DIRECTOR PLANNING & COMMUNITY SERVICES

Dinuka McKenzie - Marulan Gas Fired power Stations

From: "Robert Mowle" <rmowle@crookwell.nsw.gov.au>
To: <dinuka.mckenzie@planning.nsw.gov.au>
Date: 29/01/2008 09:49
Subject: Marulan Gas Fired power Stations

Hi Dinuka

I rtefer to my email dated 23 January 2008 and advise that Council at its meeting held on the 24 January 2008 endorsed the previously forwarded items and also resolved to request that the issue of Community Benefit be considered as part of the assessments.

Regards

Robert

Dinuka McKenzie - Marulan Gas Fired Power Stations

From: "Robert Mowle" <rmowle@crookwell.nsw.gov.au>
To: <dinuka.mckenzie@planning.nsw.gov.au>
Date: 23/01/2008 13:28
Subject: Marulan Gas Fired Power Stations

Hi Dinuka

I refer to your letter dated 19 December 2007 and advise the following additional items Council seeks to have addressed in the environmental assessments;

Impacts on water quality
Bushfire impacts on the facility
Bushfire ignition threats from the facility
Soil erosion control measures
Effluent management

Apologies for being a day late and I also have a Council meeting tomorrow and will advise if any other items are raised.

Thanks

Robert

URS

20 March 2008
Project No. 43177585

Department of Primary Industries
PO Box 3, Tumut NSW 2720

Attention: Luke Pearce
Conservation Manager – South West

Dear Mr Pearce,

Subject: Marulan Gas Turbine Facilities

URS has been commissioned by Delta Electricity and EnergyAustralia to prepare an Environmental Assessment for the proposed Gas Turbine Facilities at Marulan. The intent of this correspondence is to provide an opportunity for comment on the proposal.

Delta Electricity and EnergyAustralia are proposing to seek project approval to construct two separate gas turbine facilities side by side on the site adjacent to the existing Marulan Switchyard near Brayton NSW.

The proposed development would generate electricity from natural gas and help meet future electricity needs in NSW.

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

Stage 1 Two open cycle gas turbines with a total capacity in the range of 250 to 350 MW. Each turbine could have a capacity in the order of 125 to 175 MW depending on final equipment selected.

Stage 2 Conversion to combined cycle facility to generate electricity for intermediate/base load electricity demand. The proposed capacity of the Stage 2 combined cycle plant is in the range of 400 to 450 MW.

The proposed gas turbine facility for *EnergyAustralia* would comprise two open cycle gas turbines developed in a single stage. Each turbine could have a capacity in the order of 175 MW, producing a total nominal facility output of 350 MW.

Delta Electricity and EnergyAustralia submitted an application to the NSW Department of Planning for the proposed facilities to be considered as a major project, for the purpose of environmental assessment and approval. This request was granted on 8 October 2007. This means that the proposals will be subject to the provisions of Part 3A of the *Environmental*

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Level 3, 116 Miller Street North Sydney
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URS

Planning and Assessment Act 1979. It is also noted that the project meets the requirements of the declaration of the Minister for Planning on 26 February 2008 of certain power generating facilities to be 'critical infrastructure projects'.

We provide the enclosed Preliminary Environmental Assessment that describes the type of facility that is to be built. A Planning Focus Meeting was held in January 2008 and the Environmental Assessment Requirements issued by DoP on 13 March 2008 require us to consult with Department of Primary Industries.

The proposed site for the two facilities is on the Wollondilly River and is in the Upper Lachlan Shire Council (ULSC) area. It is noted that although it is located on the south side of the river which is usually Goulburn Mulwaree council area, the site was subdivided from a much larger site that sat in ULSC and therefore the subdivided site remains in the ULSC. The site topography rises from the Wollondilly River to a low ridgeline running in a rough north-south direction, rising more prominently in the south-eastern corner of the site. Several drainage lines and small creeks traverse the site all draining into the Wollondilly River. There some small dams on the site.

Section 4.2.1 of the attached Preliminary Environmental Assessment describes the flooding, surface water and hydrology issues on the site. The Environmental Assessment Requirements request the Environmental Assessment reflect a design philosophy of zero water discharge from the site, except for natural surface water flows.

If you wish provide comment on this proposal, please send it to the address below by 31 March 2008.

Attention: Nicole Brewer
URS Australia Pty Ltd
Level 3, 116 Miller Street
North Sydney NSW 2060
Ph: 02 8925 5654

Yours sincerely,
URS AUSTRALIA PTY LTD

Nicole Brewer
Associate Environmental Engineer

Enclosures

NSW DEPARTMENT OF
PRIMARY INDUSTRIES

20 March 2008

Nicole Brewer
URS Australia Pty Ltd
Level 3, 116 Miller Street
North Sydney NSW 2060

Dear Nicole

Re: Marulan Gas Turbine Facilities.

Thank you for referring the above proposal to the Department of Primary Industries (DPI) for comment. The Department would like to submit these comments for consideration in the Environmental Assessment for the proposed Gas Turbine facilities at Marulan.

It appears from the Preliminary Environmental Assessment that the proposed gas Turbine Facility will have little impact on the Wollondilly River or other aquatic environments within the proposed site. DPI would like to see included in the assessment provision to protect and enhance the riparian zone of the Wollondilly River and any other creeks or aquatic habitat within proposal site.

Riparian Vegetation
Riparian vegetation stabilises riverbanks, contributes organic matter (including large woody debris or snags) and partially filters out waterway pollutants and as such is an integral aquatic habitat component. The degradation of native riparian vegetation along NSW watercourses has been listed as a Key Threatening Process under the threatened species schedules of the *Fisheries Management Act 1994*.

I am happy to advise that the Department of Primary Industries (DPI) does not have any objections or further comments on the Environmental Assessment or the proposed Gas Turbine Facility at this stage.

For further information please contact me on (02) 6947 4188

Yours Sincerely

Luke Pearce
Conservation Manager, South West

Aquatic Habitat Protection, Fisheries Management Branch
NSW Department of Primary Industries
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