VOLUME 2 APPENDICES JULY 2011

AGL Dalton Power Project Environmental Assessment

MP10-0035

Appendix A

Director General's Requirements

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AGL

Switched on Business.

NSW GOVERNMENT | Planning

Contact: Ingrid Ilias
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Email: ingrid.ilias@planning.nsw.gov.au

Our ref: 10/05760-2

Mr Steve Jackson
Manager Power Development
AGL Energy Limited
Locked Bag 1837
ST LEONARDS NSW 2065

Dear Mr Jackson

Proposed Dalton Energy Project, Upper Lachlan Local Government Area (MP 10_0035)

The Department has received a project application (MP 10_0035) by AGL Energy Limited for the development of a gas-fired power station three kilometres north of the township of Dalton in the Upper Lachlan local government area.

I have attached a copy of the Director-General's requirements (DGRs) for the preparation of an Environmental Assessment for the project. These requirements have been prepared following the Planning Focus Meeting held on Thursday 25 March 2010 and in consultation with the relevant government agencies.

It should be noted that the Director-General's requirements have been prepared based on the information provided to date. Under section 75F(3) of the Act, the Director-General may alter or supplement these requirements if necessary and in light of any additional information that may be provided prior to the proponent seeking approval for the Project.

I would appreciate it if you could contact the Department at least two weeks before you propose to submit the Environmental Assessment for the proposal to determine:

- the fees applicable to the application;
- consultation and public exhibition arrangements that will apply;
- options available in publishing the Environmental Assessment via the Internet; and
- number and format (hard-copy or CD-ROM) of the Environmental Assessment that will be required.

Prior to exhibiting the Environmental Assessment, the Department will review the document to determine if it adequately addresses the DGRs. The Department may consult with other relevant government agencies in making this decision. If the Director-General considers that the Environmental Assessment does not adequately address the DGRs, the Director-General may require the Proponent to revise the Environmental Assessment to address the matters notified to the Proponent. Following this review period the Environmental Assessment will be made publicly available for a minimum period of 30 days.

If your proposal includes any actions that could have a significant impact on matters of National Environmental Significance, it will require an additional approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This approval would be in addition to any approvals required under NSW legislation and it is your responsibility to contact the Department of the Environment, Heritage, Water and the Arts to determine if an approval under the EPBC Act is required for your proposal (6274 1111 or http://www.environment.gov.au).

If you have any enquiries about these requirements, please contact Ms Ingrid Ilias on the above contact details or Mr Neville Osborne (Manager, Water and Energy) on 9228 6337.

Yours sincerely

Scott Jeffries
Director
Infrastructure Projects
as delegate for the Director-General

19/04/10

Director-General's Requirements

Section 75F of the *Environmental Planning and Assessment Act 1979*

Project	Construction and operation of a gas-fired power station, in stages, with the initial stage comprising between two and four open cycle gas turbines with a capacity of between 250 and 750 megawatts and the ultimate stage comprising a facility with a capacity of up to 1,500 megawatts. The power station is proposed to be operated as a peaking power station which would operate up to 15% of the year. The proposal includes: • gas-fired power station facility; • infrastructure within the site including access road, transmission connection and general site infrastructure; and • infrastructure beyond the site including lateral gas pipeline from the Moomba to Sydney Gas pipeline and gas offtake from this pipeline.
Site	An approximately 500 hectare site located off Walshes Road, approximately three kilometres from the township of Dalton, in the Upper Lachlan Shire local government area (LGA).
Proponent	AGL Energy Limited
Date of Issue	19 April 2010
Date of Expiration	19 April 2012
General Requirements	The Environmental Assessment (EA) must include: • an **executive summary**; • a **description of the project** including construction, operation and staging. The description should include any required infrastructure such as pipelines and connection to the grid for the operation of the project; • consideration of any **relevant statutory provisions** including the consistency of the project with the objects of the *Environmental Planning and Assessment Act 1979*; • consideration of **alternatives** to the project, including site selection; • an **assessment of the environmental impacts** of the project with particular focus on the key assessment requirements specified below and proposed mitigation/management measures for residual environmental impacts; • **justification** for undertaking the project with consideration of the benefits/impacts of the proposal (including community benefits) and proposed management/ mitigation/ monitoring; • a **draft Statement of Commitments** outlining environmental management, mitigation and monitoring measures; and • **certification** by the author of the Environmental Assessment that the information contained in the Assessment is neither false nor misleading.
Key Assessment Requirements	The EA must include an assessment of the following key issues: • **Strategic Justification** - the Environmental Assessment must: → include a strategic assessment of the need, scale, scope, operational mode (e.g. baseload, intermediate, peaking) and location for the project in relation to predicted electricity demand, transmission constraints and the strategic direction of the region and the State in relation to electricity supply, demand and electricity generation technologies; → include an analysis of site suitability with respect to potential land use conflicts with existing and future land uses taking into account local and strategic land use objectives; and → describe alternatives considered for the project in particular technology and configuration including fuel source, air emission, water use and options for waste disposal/ beneficial reuse and provide justification for the project demonstrating its benefits at a local and strategic scale in comparison to alternatives considered, including the do nothing option. • **Greenhouse Gases** - the Environmental Assessment must include a comprehensive greenhouse gas assessment undertaken in accordance with the methodology specified in the *National Greenhouse Accounts (NGA) Factors* (latest release) including: → quantification of emissions (in tonnes of carbon dioxide equivalent) in accordance with the *Greenhouse Gas Protocol: Corporate Standard (World Council for Sustainable Business Development & World Resources Institute)* including: direct emissions (Scope 1), indirect emissions from electricity (Scope 2) and any significant up or down stream emissions (Scope 3) considering all stages of the

project (annual emission for each year of the project during construction, operation and decommissioning is required to be provided);

→ comparison of predicted emissions intensity and thermal efficiency against best achievable practice and current NSW averages for the activity, and of predicted emissions against total annual national emissions (expressed as a percentage of total national greenhouse gases production per year over the life of the project);

→ evaluation of the availability and feasibility of measures to reduce and/ or offset the greenhouse emissions of the project including options for carbon capture and storage. Where current available mitigation technology is not technically or economically feasible, the Environmental Assessment must demonstrate that the proposal will use best available technology, including carbon capture readiness, and identify options for triggers that would require staged implementation of emerging mitigation technologies; and

→ evaluation of the project in the light of various carbon emission prices per tonne both with and without proposed mitigation measures.

- **Air Quality -** – the Environmental Assessment must include a comprehensive air quality impact assessment based on dispersion modelling prepared in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (DECC, 2005) (Approved Methods) considering worst case operating scenarios and meteorological conditions, representative monitoring and receiver locations and cumulative impacts, as applicable. The Environmental Assessment must address air quality impacts at a local, regional and interregional level and include a plume rise assessment. The assessment must demonstrate that the project would meet the impact assessment criteria in Section 7 of the Approved Methods and the requirements of the *Protection of the Environment Operations (Clean Air) Regulation 2002* for all relevant pollutants based on ground level concentrations at the plant boundary and beyond at all sensitive receptors. The Environmental Assessment must clearly demonstrate that the project has been designed to include the application of Best Available Control Technology (BACT) in relation to air emissions. The assessment must include a framework for the mitigation, management and monitoring of air quality impacts, particularly with respect to sensitive receptors likely to be impacted by cumulative air quality impacts in the local area.
- **Water Quantity and Quality Impacts** The Environmental Assessment must include an assessment of the water quantity and quality impacts of the proposal (i.e. surface and groundwater), with particular reference to the water needs for the life of the project, the proposed source of water, and the implementation of water saving measures (including use of rainwater and runoff from sealed, hardstand and disturbed areas as much as practically possible). In this regard, a water balance must be provided. The Proponent must be able to demonstrate that an adequate and secure water supply is available for the life of the project. The Environmental Assessment must demonstrate that any water crossings are designed in accordance with DWE Guidelines *Controlled Activity Approvals.* The Environmental Assessment must consider the adherence to existing embargo provisions for proposed water use or impact (e.g. Murray Darling Basin Groundwater Embargo – Order 2). The Environmental Assessment must also identify the quantity and quality of wastewater, how this wastewater would be disposed of, and how stormwater would be managed at the site. The Environmental Assessment must reflect a design philosophy of zero water discharge from the site, except for natural surface water flows.
- **Noise Impacts -** the Environmental Assessment must include a comprehensive operational noise impact assessment for the project, prepared in accordance with *NSW Industrial Noise Policy* (EPA, 2000) considering worst case operating scenarios and meteorological conditions, representative monitoring and receiver locations, and cumulative impacts from any adjacent relevant land uses (existing and approved). The assessment must consider the potential for low frequency noise generation, peak noise events with the potential to cause sleep disturbance and the effects of stable atmospheric conditions. The Environmental Assessment must also consider the potential for:

  → construction noise impacts consistent with the *Interim Construction Noise Guidelines* (DECCW, 2009);

  → vibration impacts during construction and operation consistent with *Assessing Vibration: A Technical Guideline* (DECC, 2006); and

  → traffic generated noise during construction and operation consistent with *Environmental Criteria for Road Traffic Noise* (EPA, 1999). The method, data and assumptions used to assess the impact of road haulage on residential properties must be fully documented and justified.

The Environmental Assessment must clearly outline the noise mitigation, monitoring

	and management measures the Proponent intends to apply to the project. • **Flora and Fauna Impacts** - the Environmental Assessment must include an assessment of impacts of the project on flora and fauna, prepared in accordance with *Guidelines for Threatened Species Assessment* (DEC/ DPI, July 2005) and specifically report on the considerations listed in Step 3 and whether it meets each of the key thresholds set out in Step 5. The development will need to avoid any endangerered ecological communities and provide an appropriate buffer and asset protection zone. The Environmental Assessment must specifically consider threatened species and communities listed under both State and Commonwealth legislation that have been recorded on the site and surrounding land. The Environmental Assessment must also detail measures to avoid or mitigate impacts on threatened species associated with the siting and construction of any access roads and other infrastructure. This must include the identification of any potentially impacted paddock and fence trees with an assessment of the functioning of this vegetation in terms of habitat and movement of arboreal threatened fauna in the local area; • **Indigenous Heritage** - the Environmental Assessment must include an assessment of impacts on Aboriginal heritage, in accordance with draft *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DEC, 2005). The Environmental Assessment must also include an assessment of the potential for the project to impact on known items of non-Aboriginal heritage significance, and include a management framework for management of any additional heritage items that may be uncovered during construction of the project. The Environmental Assessment 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 for the mitigation of impacts. • **Hazards and Risks** - the Environmental Assessment must include a screening of potential hazards on site (including new gas supply infrastructure) to determine the potential for off site impacts and any requirement for a Preliminary Hazard Analysis (PHA). The PHA, should potential off-site impacts be identified, must be prepared in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 3*, *Hazardous Industry Planning Advisory Paper No. 6* and *Multi-level Risk Assessment* and with reference to applicable Australian Standards (including AS2885 Pipelines - Gas and Liquid Petroleum – Operation and Maintenance). Risk impacts associated with the transport of dangerous goods and hazardous materials must be documented with reference to the Department's draft *Route Selection* guideline. • **Visual Impacts** – the Environmental Assessment must include an assessment of the visual impact of the project from representative viewing points including residential receivers, settlements and significant public view points and include the mitigation and management of visual amenity impacts on affected receivers. An overview of the effectiveness and reliability of the measures and any residual impacts after the implementation of such measures must also be included. • **Traffic and Transport** – the Environmental Assessment must include an assessment of the traffic and transport impacts of the project, particularly during the project's construction stage. The assessment must include a discussion of measures that will be implemented to mitigate adverse impacts on the public road network, particularly from the haulage of heavy plant and equipment to the site. • **General Environmental Risk Analysis** – notwithstanding the above key assessment requirements, the Environmental Assessment must include an environmental risk analysis to identify potential environmental impacts associated with the project (construction and operation), proposed mitigation measures and potentially significant residual environmental impacts after the application of proposed mitigation measures. Where additional key environmental impacts are identified through this environmental risk analysis, an appropriately detailed impact assessment of this additional key environmental impact must be included in the Environmental Assessment.
Consultation Requirements	You must undertake an appropriate and justified level of consultation with the following parties during the preparation of the Environmental Assessment: • NSW Department of Environment, Climate Change and Water including separate consultation with the Office of Water; • Upper Lachlan Shire Council; • NSW Department of Industry and Investment; • Transgrid; • Air Services Australia, • Civil Aviation Authority; • Department of Defence; • Rural Fire Service; • Lachlan Catchment Management Authority; and • the local community including surrounding land owners.

	The Environmental Assessment must clearly indicate issues raised by stakeholders during consultation, and how those matters have been addressed in the document.

NSW GOVERNMENT | Planning

Contact: Neville Osborne
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Email: neville.osborne@planning.nsw.gov.au

Our ref: 10/05760-2
Your ref:

Mr Steve Jackson
Manager Power Development
AGL Energy Limited
Locked Bag 1837
ST LEONARDS NSW 2065

Dear Mr Jackson

Proposed Dalton Energy Project, Upper Lachlan Local Government Area (MP 10_0035) – Supplement to the Director-General's Requirements

I refer to the Director-General's requirements issued for the above project on 19th April, 2010.

As you are aware, the project was declared a Controlled Action under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) on 11th June 2010, for likely impacts on listed threatened species and communities. In accordance with section 75F(3) of the NSW *Environmental Planning & Assessment Act 1979*, I have enclosed the Commonwealth's requirements for the assessment.

I also confirm that the interim administrative procedures in relation to the accredited assessment process will apply to the assessment of this project under the EPBC Act, so that the Department can undertake an environmental impact assessment of the project to satisfy the requirements of both NSW and Commonwealth legislation.

You must ensure that the Environmental Assessment adequately addresses the Director-General's requirements issued on 19th April, 2010, and the supplementary requirements attached to this letter.

If you have any enquiries about these requirements, please do not hesitate to contact Neville Osborne on the above contact details.

Yours sincerely

5/7/10

Daniel Keary
Director – Infrastructure Projects
as delegate for the Director-General

Department of the Environment, Water, Heritage and the Arts – requirements for environmental assessment EPBC 2010/5484

Section 75F(3) of the *Environmental Planning and Assessment Act 1979*

The Commonwealth Minister for Environment Protection, Heritage and the Arts has declared the AGL gas-fired power station and associated infrastructure project (the proposed construction and operation of a gas-fired power station and associated infrastructure located approximately 3.5 km north of Dalton in New South Wales), to be a controlled action under section 75 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The controlled action is likely to have a significant impact on the EPBC Act listed critically endangered ecological community White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Box-Gum Woodland) and the EPBC Act listed endangered ecological community Natural Temperate Grassland of the Southern Tablelands of NSW and the Australian Capital Territory (NTG).

In accordance with the one-off accredited assessment process for this project, the environmental assessment of the impacts of the controlled action must be assessed under part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Pursuant to section 75F(3) of part 3A of the EP&A Act the Director-General is required to notify the proponent of these requirements.

The assessment should include enough information about the controlled action and its relevant impacts to allow the Commonwealth Minister for Environment Protection, Heritage and the Arts to make an informed decision whether or not to approve the controlled action under the EPBC Act.

The following assessment requirements are to be integrated into the assessment required for part 3A of the EP&A Act. The following matters in the EPBC Act and schedule 4 of the *Environment Protection and Biodiversity Conservation Regulations 2000* should be considered.

General information

1. The background of the action, including:

    a. the title of the action;
    b. the full name and postal address of the designated proponent;
    c. a clear outline of the objective of the action;
    d. the location of the action;
    e. the background to the development of the action;
    f. how the action relates to any other actions (of which the proponent should reasonably be aware) that have been, or are being, taken or that have been approved in the region affected by the action;
    g. the current status of the action; and
    h. the consequences of not proceeding with the action.

Description of the controlled action

2. A description of the action, including:

    a. all the components of the action;

b. the precise location of any works to be undertaken, structures to be built or elements of the action that may have relevant impacts;
c. how the works are to be undertaken and design parameters for those aspects of the structures or elements of the action that may have relevant impacts;
d. to the extent reasonably practicable, a description of any feasible alternatives to the controlled action that have been identified through the assessment, and their likely impact, including:

    i. if relevant, the alternative of taking no action;
    ii. a comparative description of the impacts of each alternative on the matters protected by the controlling provisions for the action;
    iii. sufficient detail to clarify why any alternative is preferred to another.

A description of the relevant impacts of the controlled action

3. An assessment of all relevant impacts[1] with reference to the *EPBC Act Policy Statement 1.1 Significant Impact Guidelines Matters of National Environmental Significance (2009)* that the controlled action has, will have or is likely to have on:

    a. relevant threatened species and/or threatened ecological communities listed under sections 18 and 18A of the EPBC Act, including the Box-Gum Woodland and NTG.

4. Information must include:

    a. a description of the relevant impacts of the action on matters of national environmental significance;
    b. a detailed assessment of the nature and extent of the likely short term and long term relevant impacts;
    c. a statement whether any relevant impacts are likely to be unknown, unpredictable or irreversible;
    d. analysis of the significance of the relevant impacts;
    e. any technical data and other information used or needed to make a detailed assessment of the relevant impacts.

5. A description of the relevant impacts on the Box-Gum Woodland and NTG should include an analysis of the vegetation condition on the site, as well as the methods by which this was determined. It should also include direct, indirect, cumulative and facilitative impacts on the:

    a. extent of the Box-Gum Woodland and NTG, including connectivity with other areas of the ecological communities;
    b. quality or integrity of the Box-gum Woodland and NTG (including, but not limited to, assisting invasive species, that are harmful to the ecological communities, to become established; or causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the communities which kill or inhibit the growth of species in the ecological community);
    c. EPBC Act listed species in, or in any way dependent upon, the Box-Gum Woodland or NTG;
    d. composition of the Box-Gum Woodland and NTG;

[1] The term "relevant impact" is defined in section 82 of the EPBC Act.

e. habitat present on site critical to the survival of the Box-Gum Woodland and NTG[2]; and
f. abiotic (non-living) factors (such as water, nutrients or soil) necessary for the Box-Gum Woodland and NTG's survival, for example increasing groundwater levels or making the site wetter, soil disturbance or substantial alteration of surface water drainage patterns.

These impacts should be described for the construction and operation phases of the controlled action.

6. Where there is a potential habitat for EPBC Act listed species, such as the Golden Sun Moth (*Synemon Plana*), Grassland Earless Dragon (*Tympanocryptus pinguicolla*), Pink-tailed Worm-lizard (*Aprasia parapulchella*) or Striped Legless Lizard (*Delma Impar*), surveys must be undertaken. These surveys must be timed appropriately and undertaken for a suitable period of time by a qualified person[3]. A subsequent description of the relevant impacts on such EPBC Act listed species should include, inter alia, direct, indirect, cumulative and facilitative impacts on the:

a. population of the species at the site;
b. area of occupancy of the species;
c. habitat critical to the survival of the species;
d. breeding cycle of the population; and
e. availability or quality of habitat for the species.

Proposed safeguards and mitigation measures

7. A description of feasible mitigation measures, changes to the controlled action or procedures, which have been proposed by the proponent or suggested in public submissions, and which are intended to prevent or minimise relevant impacts. Information must include:

a. a description, and an assessment of the expected or predicted effectiveness of, the mitigation measures;
b. any statutory or policy basis for the mitigation measures;
c. the cost of the mitigation measures;
d. an outline of an environmental management plan that sets out the framework for continuing management, mitigation and monitoring programs for the relevant impacts of the action, including any provisions for independent environmental auditing;
e. the name of the agency responsible for endorsing or approving each mitigation measure or monitoring program;
f. a consolidated list of mitigation measures proposed to be undertaken to prevent, minimise or compensate for the relevant impacts of the action.

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[2] "habitat critical to the survival of a species or ecological community" refers to areas that are necessary:
- for activities such as foraging, breeding, roosting, or dispersal;
- for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators);
- to maintain genetic diversity and long term evolutionary development; or
- for the reintroduction of population or recovery of the species or ecological community.

Such habitat may be, but is not limited to: habitat identified in a recovery plan for the species or ecological community as habitat critical for that species or ecological community; and/or habitat listed on the register of Critical Habitat maintained by the Minister under the EPBC Act.

[3] Where available, species-specific survey guidelines can be obtained on the department's *Species Profile and Threats Database*: http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl

Offsets

8. Should any residual impact exist that cannot be mitigated it may be necessary for offset measures to be considered in order to ensure the protection of matters of national environmental significance in perpetuity. If required, the department may negotiate offsets with you during the assessment phase.

Other approvals and conditions

9. Any other requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action. Information must include:

    a. details of any local or State government planning scheme, or plan or policy under any local or State government planning system that deals with the proposed action, including:

        i. what environmental assessment of the proposed action has been, or is being, carried out under the scheme, plan or policy; and
        ii. how the scheme provides for the prevention, minimisation and management of any relevant impacts;

    b. a description of any approval that has been obtained from a State, Territory or Commonwealth agency or authority (other than an approval under the Act), including any conditions that apply to the action;
    c. a statement identifying any additional approval that is required;
    d. a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action.

Economic and social matters

10. A description of the short-term and long-term social and economic implications and/or impacts of the project.

Environmental record of person proposing to take the action

11. Details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:

    a. the proponent; and
    b. for an action for which a person has applied for a permit, the person making the application.

12. Details of the proponent's environmental policy and planning framework.

Information sources

13. For information given in an environment assessment, the draft must state:

    a. the source of the information;
    b. how recent the information is;
    c. how the reliability of the information was tested; and
    d. what uncertainties (if any) are in the information.

Consultation

14. Any consultation about the action, including:

    a. any consultation that has already taken place;
    b. proposed consultation about relevant impacts of the action;
    c. if there has been consultation about the proposed action — any documented response to, or result of, the consultation.

15. identification of affected parties, including a statement mentioning any communities that may be affected and describing their views.

NSW GOVERNMENT | Environment, Climate Change & Water

Your reference : 10/05760-2
Our reference : DOC10/11670
Contact : Duncan McGregor, 6229 7002

The Manager – Water and Energy
Infrastructure Projects
Department of Planning
GPO Box 39
SYDNEY NSW 2001

13 April 2010

Dear Mr Osborne,

Re: Proposed Dalton Energy Project

I refer to your letter dated 24 March 2010, requesting the Department of Environment, Climate Change and Water's (DECCW) requirements for the environmental assessment (EA) in regard to the above proposal. DECCW understands that the project application for this proposal will be assessed by the Department of Planning (DoP) under Part 3A of the *Environmental Planning and Assessment Act 1979*. DECCW officers attended the Planning Focus Meeting for the proposed development on 25 March 2010.

DECCW has considered the details of the proposal as provided by Department of Planning (DoP), and it appears that at this stage the proposal will require an Environment Protection Licence under the *Protection of the Environment Operations Act 1997* to carry out scheduled development work and carry out the scheduled activity 'Electricity Generation (General Electricity Works)'. The proponent should make a separate application to DECCW for this licence.

DECCW has identified that the applicant should address the issues in Attachment A in the preparation of the EA to assess the environmental impacts of the proposal. In summary these issues include:

- the environmental impacts of the project;
- the greenhouse emissions of the project;
- the impacts on threatened species and endangered ecological communities;
- the impacts of the project on Aboriginal Cultural Heritage values;
- the actions that will be taken to avoid or mitigate impacts or compensate to prevent unavoidable impacts identified above.

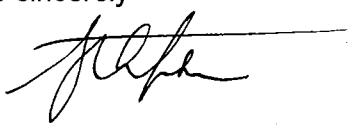
DECCW also requests that the applicant is provided with a full unaltered version of DECCW's assessment requirements and guidelines as set out in Attachments A-D.

PO Box 622, Queanbeyan NSW 2620
11 Farrer Place, Queanbeyan NSW
Tel: (02) 6229 7002 Fax: (02) 6229 7006
ABN 30 841 387 271
www.environment.nsw.gov.au

DECCW requests that 4 hard copies and an electronic copy of the EA are provided for assessment. These documents should be lodged at DECCW's South East Regional Office, 11 Farrer Place, Queanbeyan, NSW 2620.

If you require any additional information, or wish to discuss the matter further, please contact Duncan McGregor of this office on 6229 7002.

Yours sincerely



JULIAN THOMPSON
Head of Operations Unit – South East Region
Environment Protection and Regulation Group

Attachment A

Specific Information required by DECCW

Environmental impacts of the project

The EA must provide sufficient information for DECCW to be able to fully assess the development in so far as how the impacts relate to environmental legislation administered by DECCW. The EA 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 environmental sensitivity of the site and surrounds should be discussed. Details are required on the location of the proposed development, including the affected environment, to place the proposal in its local and regional environmental context including surrounding landuses, planning zonings and potential sensitive receptors.

The EA should describe mitigation and management options that will be used to prevent, control, abate or mitigate identified environmental impacts associated with the project and to reduce risks to human health and prevent the degradation of the environment. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.

The following environmental impacts of the project need to be assessed, quantified and reported on:

- Air
- Greenhouse Emissions
- Water
- Noise
- Waste
- Construction Impacts
- Incident Management
- Contaminated Land
- Threatened Species
- Aboriginal Cultural Heritage

These should be assessed in accordance with the relevant guidelines listed in Attachment D.

Air

The environmental assessment must include a robust Air Quality Impact Assessment (AQIA) based on dispersion modelling in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (DEC 2005). The DECCW requirements for the AQIA to be included in the environmental assessment are specified in Attachment B. 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.

Greenhouse Emissions

The EA should include a comprehensive assessment of, and report on, the project's predicted greenhouse gas emissions (tCO2e). Emissions should be reported broken down by:
a) Direct emissions (scope 1 as defined by the Greenhouse Gas Protocol – see reference below),
b) Indirect emissions from electricity (scope 2), and
c) Upstream and downstream emissions (scope 3)
before and after implementation of the project, including annual emissions for each year of the project (construction, operation and decommissioning).

If relevant, greenhouse emissions intensity (per unit of production) should be compared before and after the project. Emissions intensity should be compared with best practice if possible.

The emissions should be estimated using an appropriate methodology, in accordance with NSW, Australian and international guidelines (see Attachment D).

The EA should identify which emissions would be covered by the Federal Government's proposed Carbon Pollution Reduction Scheme (CPRS) once commenced.

The proponent should also evaluate and report on the feasibility of measures to reduce greenhouse gas emissions associated with the project, concentrating on emissions not covered by the CPRS.

For emissions covered by the CPRS, any evaluation should include a consideration of expected price increases due to CPRS. This could include a consideration of energy efficiency opportunities or undertaking an energy use audit for the site.

The proponent should also identify if there are any cost-effective opportunities to reduce scope 3 emissions (eg by using different methods of supply or distribution).

Water

DECCW considers that the goals for ambient water quality are relevant environmental goals to the project. The central reference document for managing ambient water quality is the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 (ANZECC Guidelines) and Water Quality Objectives framework (http://www.environment.nsw.gov.au/ieo/).

The EA must demonstrate how the following environmental outcomes for the project will be achieved:

- Preventing the pollution of waters during construction or occupation of the site by the final users;
- There is no inconsistency with any relevant Statement of Joint Intent established by the Healthy Rivers Commission; and
- Consistency with the NSW Governments River Flow Objectives and Water Quality Objectives framework.

The EA should provide details of the project that are essential for predicting and assessing impacts to waters including the quantity and physio-chemical properties of all potential water pollutants and the risks posed to the environment and human health, including the risks they pose to Water Quality Objectives in the ambient waters using technical criteria derived from the ANZECC Guidelines. The ANZECC Guidelines provide instructions for translating statements about desired environmental values and human uses into more practical management and numerical criteria.

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 operation of the turbines, including sprays for cooling intake air.

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

- DECCW supports proposals to reuse industrial effluents, 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).

The local drainage systems are defined as 'waters' pursuant to the POEO Act. Section 120 of the POEO Act prohibits the pollution of waters by any person. DECCW notes the potential need for water sourcing during the construction and operational phases. Accordingly consideration of water issues and the effects on local catchments should be fully investigated, including designing the site to capture and reuse as much runoff from sealed, hardstand and disturbed areas as practically possible.

Noise

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 *New South Wales Industrial Noise Policy* (EPA 2000) 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. Particularly, the impact assessment should identify any impacts resulting from the emission of low frequency noise and the effects of stable atmospheric conditions.

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 DECCW 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.

Waste

The EA 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. Consideration should also be given to disposal of cleared vegetation and excess spoil material.

Guidance on waste classification and management issues can be obtained from the publication *Waste Classification Guidelines* (DECC, 2008). The EA 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 EA 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.

Construction Impacts

The EA should identify and assess the impacts of any specific activity involved in site preparation associated with the construction of the power station. DECCW considers grid connections and road upgrades outside of the development envelope should also be considered as part of the EA.

Details and design specifications of appropriate sediment and erosion controls to mitigate any impacts from this component of the development on the environment should be included in the EA. Further guidance is available in the guideline *Managing Urban Stormwater - Soils and Construction,* 4e (Landcom 2004). This should include reference to appendices such as *Volume 2a: Installation of Services* (DECC 2008), available from the DECCW website at http://www.environment.nsw.gov.au/stormwater/publications.htm

Access tracks and roads should be designed, constructed and maintained in accordance with *Managing Urban Stormwater: Soils and Construction Volume 2C: Unsealed Roads* (DECC 2008) and *Volume 2D: Main Road Construction* (DECC 2008), available from the DECCW website at the above address. This should include the careful choice of drainage line crossings to minimise disturbance to stream flow and ensure stability of the drainage line, bank and crossing.

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.

The EA must also describe the rehabilitation works proposed to return disturbed areas to an appropriate state at the completion of the project. All areas disturbed during construction must be revegetated to a high standard.

DECCW emphasise that all activities must be carried out with due diligence, duty of care, and according with best management practices. Accordingly, all personnel involved in the construction works should be aware of the details of the works plans, legislation and associated pollution controls before any works commence.

Incident Management

The environmental assessment should outline procedures for responding to potential 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.

Contaminated Land

The EA 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).

Under the Contaminated Land Management Act there is a responsibility to notify the DECC of sites that pose a significant risk of harm to human health or the environment.

Impacts of the project on threatened species and their habitat

A number of threatened entities are known to occur or have potential to occur in the Dalton area. A complete fauna and flora survey should be conducted and documented in accordance with the draft "Guideline for Threatened Species Assessment" (DEC and DPI, 2005) as it provides the assessment framework for threatened species issues associated with the site. All survey work should be undertaken at the appropriate time of year for each species to maximise the survey results.

The project area may support Endangered Ecological Communities (EEC). Development will need to avoid EEC and provide an appropriate buffer and asset protection zone. The EA must describe what actions will be undertaken to avoid or mitigate impacts caused by the development on all threatened species described at the site. Threatened species that could potentially occur onsite and should be considered in the EA include those listed in Tables 1 and 2 of Attachment C.

The above list is not exhaustive and there is potential for a number of other threatened species to occur at the site. See Attachment B for a complete list of relevant threatened species and associated assessment requirements to be assessed for this project.

Likely impacts on regionally significant, protected, and threatened species and their habitats need to be assessed, evaluated and reported. The assessment should specifically report on the considerations listed in Step 3 of the Draft Threatened Species Assessment Guidelines (DECC and DPI, 2005) as stated below.

- **Step 3, Involves identifying not only the magnitude and extent of impacts but also the significance of the impacts as related to the conservation importance of the habitat, individuals and population likely to be affected."**

The EA should 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 compensate to prevent unavoidable impacts of the project on threatened species, populations, ecological communities, or their habitats. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after the measures are implemented.

Other vegetation clearing

The EA should clearly outline the extent to which the development footprint will impact on areas of native vegetation. It should also describe the tenure and conservation status of each parcel of land to be affected by the proposal or used as an offset.

Offsetting biodiversity and habitat loss would be required as identified in the threatened species guidelines. There are formulas associated with the "maintain and improve" principle of the Government's vegetation reforms that DECCW considers should apply.

Biodiversity Offset Principles

1. **Impacts must be avoided first by using prevention and mitigation measures**
   Offsets are then used to address remaining impacts. This may include modifying the proposal to avoid an area of biodiversity value or putting in place measures to prevent offsite impacts.

2. **All regulatory requirements must be met**
   Offsets cannot be used to satisfy approvals or assessments under other legislation, e.g. assessment requirements for Aboriginal heritage sites, pollution or other environmental impacts (unless specifically provided for by legislation or additional approvals).

3. **Offsets must never reward ongoing poor performance**
   Offset schemes should not encourage landholders to deliberately degrade or mismanage offset areas in order to increase the value from the offset.

4. **Offsets will complement other government programs**
   A range of tools is required to achieve the NSW Government's conservation objectives, including the establishment and management of new national parks, nature reserves, state conservation areas and regional parks and incentives for private landholders.

5. **Offsets must be underpinned by sound ecological principles**
   They must:
   - include the consideration of structure, function and compositional elements of biodiversity, including threatened species
   - enhance biodiversity at a range of scales

- consider the conservation status of ecological communities
- ensure the long-term viability and functionality of biodiversity.

Biodiversity management actions, such as enhancement of existing habitat and securing and managing land of conservation value for biodiversity, can be suitable offsets. Reconstruction of ecological communities involves high risks and uncertainties for biodiversity outcomes and is generally less preferable than other management strategies, such as enhancing existing habitat.

6. **Offsets should aim to result in a net improvement in biodiversity over time**

Enhancement of biodiversity in offset areas should be equal to or greater than the loss in biodiversity from the impact site.

Setting aside areas for biodiversity conservation without additional management or increased security is generally not sufficient to offset against the loss of biodiversity. Factors to consider include protection of existing biodiversity (removal of threats), time-lag effects, and the uncertainties and risks associated with actions such as revegetation.

Offsets may include enhancing habitat, reconstructing habitat in strategic areas to link areas of conservation value, or increasing buffer zones around areas of conservation value and removal of threats by conservation agreements or reservation.

7. **Offsets must be enduring and they must offset the impact of the development for the period that the impact occurs**

As impacts on biodiversity are likely to be permanent, the offset should also be permanent and secured by a conservation agreement or reservation and management for biodiversity. Where land is donated to a public authority or a private conservation organisation and managed as a biodiversity offset, it should be accompanied by resources for its management. Offsetting should only proceed if an appropriate legal mechanism or instrument is used to secure the required actions.

8. **Offsets should be agreed prior to the impact occurring**

Offsets should minimise ecological risks from time-lags. The feasibility and in-principle agreements to the necessary offset actions should be demonstrated prior to the approval of the impact. Legal commitments to the offset actions should be entered into prior to the commencement of works under approval.

9. **Offsets must be quantifiable and the impacts and benefits must be reliably estimated**

Offsets should be based on quantitative assessment of the loss in biodiversity from the clearing or other development and the gain in biodiversity from the offset. The methodology must be based on the best available science, be reliable and used for calculating both the loss from the development and the gain from the offset. The methodology should include:

- the area of impact
- the types of ecological communities and habitat/species affected
- connectivity with other areas of habitat/corridors
- the condition of habitat
- the conservation status and/or scarcity/rarity of ecological communities
- management actions
- level of security afforded to the offset site.

The best available information/data should be used when assessing impacts of biodiversity loss and gains from offsets. Offsets will be of greater value where:

- they protect land with high conservation significance
- management actions have greater benefits for biodiversity
- the offset areas are not isolated or fragmented
- the management for biodiversity is in perpetuity (e.g. secured through a conservation agreement).

Management actions must be deliverable and enforceable.

10. **Offsets must be targeted**
They must offset impacts on the basis of like-for-like or better conservation outcome. Offsets should be targeted according to biodiversity priorities in the area, based on the conservation status of the ecological community, the presence of threatened species or their habitat, connectivity and the potential to enhance condition by management actions and the removal of threats. Only ecological communities that are equal or greater in conservation status to the type of ecological community lost can be used for offsets. One type of environmental benefit cannot be traded for another: for example, biodiversity offsets may also result in improvements in water quality or salinity but these benefits do not reduce the biodiversity offset requirements.

11. **Offsets must be located appropriately**
Wherever possible, offsets should be located in areas that have the same or similar ecological characteristics as the area affected by the development.

12. **Offsets must be supplementary**
They must be beyond existing requirements and not already funded under another scheme. Areas that have received incentive funds cannot be used for offsets. Existing protected areas on private land cannot be used for offsets unless additional security or management actions are implemented. Areas already managed by the government, such as national parks, flora reserves and public open space cannot be used as offsets.

13. **Offsets and their actions must be enforceable through development consent conditions, licence conditions, conservation agreements or a contract**
Offsets must be audited to ensure that the actions have been carried out, and monitored to determine that the actions are leading to positive biodiversity outcomes.

Impacts of the project on Aboriginal cultural heritage values

The EA for the project should address and document the information requirements set out in the *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DEC 2005). This should include undertaking an independent archaeological report and assessment according to the *Aboriginal Cultural Heritage Standards and Guidelines Kit* and clearly demonstrate effective consultation with the Aboriginal community following the *Interim Aboriginal Community Consultation Requirements for Applicants* (DEC 2005).

The assessment and consultation should identify the nature and extent of impacts on Aboriginal cultural heritage values across the study area; the extent and significance of each Aboriginal site and value located; formulate actions to mitigate impacts on Aboriginal cultural heritage values in association with the Aboriginal communities; and develop long term management recommendations for the Aboriginal cultural values located in the study area. 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.

A copy of the archaeological report and Aboriginal community consultation should be provided to DECCW for comment and assessment.

Attachment B

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

Air Quality Impact Assessment Requirements

At a minimum, DECCW requires the following information to be included in the Air Quality Impact Assessment. However, these requirements are complementary to and should not replace the requirements of the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (DEC 2005).

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

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* ("the Regulation") should be provided. Specific concentration limits for scheduled activities are described in Schedules 2-4 of the Regulation.

While the Regulation specifies the maximum allowable emission levels, DECCW 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 criteria from Table 7.1 of the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (DEC 2005) (where relevant) to determine the potential air quality impact of the proposal at any location beyond the boundary of the premises.

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 DECCW are included in Table 7.1 of the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (DEC 2005). 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.

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 C

DIRECTOR GENERAL'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS FOR THE EVALUATION OF IMPACTS ON THREATENED SPECIES for THE DALTON ENERGY PROJECT.

INTRODUCTION

The purpose of these Directors General's requirements is to provide the assessment requirements to allow you, as the applicant, to identify the issues pertaining to threatened species, populations, ecological communities or their habitats, and provide appropriate amelioration for adverse impacts resulting from the action and to assist the consent or approval authorities in the assessment of your proposal pursuant to the *Environmental Planning and Assessment Act 1979* (EP&A Act).

DEFINITIONS

The definitions given below are relevant to these requirements:

- **Development** has the same meaning as in the EP&A Act.
- **Activity** has the same meaning as in the EP&A Act
- **Proposal** is the development, activity or action proposed
- **Subject Site** means the area directly affected by the proposal.
- **Study Area** means the subject site and any additional areas which are likely to be affected by the proposal, either directly or indirectly. The study area should extend as far as is necessary to take all potential impacts into account.
- **Locality** is the area within a 5km radius of the subject site
- **Subject Species, Populations or Ecological Communities** means those threatened species, populations or ecological communities that are known or considered likely to occur in the study area. The EVALUATION OF IMPACTS is to explicitly consider the impacts of the proposal on each of these entities.
- **Direct Impacts** are those that directly affect habitat and individuals, usually within the footprint of the proposal. They include, but are not limited to, clearing and habitat removal. Consideration must be given to all of the likely direct impacts of the proposed activity or development.
- **Indirect Impacts** occur when project-related actions affect species, populations or ecological communities in a manner other than direct loss, usually beyond the footprint of the proposal. Indirect impacts can include loss of individuals through predation by domestic and/or feral animals, deleterious hydrological changes (including increased runoff and raising or lowering of the water table), erosion, weed invasion, pollution, trampling or other impacts due to increased human activity within or directly adjacent to sensitive habitat areas, altered fire regimes, habitat fragmentation and disruption of wildlife movement corridors. As with direct impacts, consideration must be given to all of the likely indirect impacts of the proposed activity or development.

- **Life Cycle** is the series or stages of reproduction, growth, development, aging and death of an organism.

- **Viable** means the capacity to successfully complete each stage of the life cycle under normal conditions.

- **Risk of Extinction** is the likelihood that the local population of the species or local occurrence of the endangered population or ecological community will become extinct either in the short, medium or long-term as a result of direct or indirect impacts on the viability of that population and includes changes to the ecological function of communities.

- **Local Population** is the population that occurs in the study area. The assessment of the local population may be extended to include individuals beyond the study area if it can be clearly demonstrated that contiguous or interconnecting parts of the population continue beyond the study area, according to the following definitions.

  - The local population of a threatened plant species comprises those individuals occurring in the study area or the cluster of individuals that extend into habitat adjoining and contiguous with the study area that could reasonably be expected to be cross-pollinating with those in the study area.
  - The local population of resident fauna species comprises those individuals known or likely to occur in the study area, as well as any individuals occurring in adjoining areas (contiguous or otherwise) that are known or likely to utilise habitats in the study area.
  - The local population of migratory or nomadic fauna species comprises those individuals that are likely to occur in the study area from time to time.

  In cases where multiple populations occur in the study area, each population should be assessed separately.

- **Local Occurrence** means the ecological community that occurs within the study area. However the local occurrence may include adjacent areas if the ecological community on the study area forms part of a larger contiguous area of that ecological community and the movement of individuals and exchange of genetic material across the boundary of the study area can be clearly demonstrated.
- **Composition** means both the plant and animal species present, and the physical structure of the ecological community. Note that while many ecological communities are identified primarily by their vascular plant composition, an ecological community consists of all plants and animals as defined under the TSC Act that occur in that ecological community.

All other definitions are the same as those contained in the TSC Act.

1 CONTEXTUAL INFORMATION

1.1 Description of proposal, subject site and study area

A full description of the action proposed includes a description of all associated actions. These actions may occur on or off the subject site.

In describing the action proposed, the proportion of the subject site and the study area that will be affected is to be provided, including details of the location of any auxiliary infrastructure and all component parts of the proposal including, but not restricted to, (i) roadworks and temporary access and egress routes, (ii) drainage and settling ponds, stockpile areas, diversion banks, vehicle parking areas (iii) changes in surface water flows (iv) utilities such as electricity, drainage, sewage, gas, (v) any actions necessary for fire management, (vi) stockpile areas, (vii) temporary buildings etc.

The type of action proposed shall be detailed, including the timetable for the construction of the proposal. If a staged construction approach is adopted then the timetable shall clearly indicate this.

If subsequent development of adjacent land is proposed by the proponent in the future, including any additional road construction then this shall be identified to the extent that it is known at the time of preparing the Environmental Assessment. If existing structures are to be relocated, this should also be described and assessed.

The vegetation within the study area that is to be retained is to be fully documented, and shown on the relevant plans and maps. The proposed management regimes for such areas are also to be documented.

2. PROVISION OF RELEVANT PLANS AND MAPS

A detailed plan of the *study area* shall be provided at a preferred scale of 1:4,000 or finer. This plan shall show the *proposal*, the location and type of vegetation communities present within the *study area*, the full extent of vegetation clearing anticipated, and the scale of the plan. This plan shall also show the location of any key habitat resources for threatened species (eg. hollow-bearing trees, identified feed trees, potential breeding sites, rock outcrops). Where the general habitat of each *subject species, population or ecological community* within the *study area* can be clearly delineated, this habitat shall be represented on the plan.

Colour aerial photography of the *locality* (or a reproduction of such a photograph) shall be provided. This aerial photograph shall clearly show the *subject site* and the scale of the photograph.

The locations of the *subject species, populations or ecological communities* recorded in any survey conducted for the purposes of the Environmental Assessment shall be represented on a map of the *study area* that shows the *proposal* (preferred scale 1:4,000 or finer).

A topographic map of the general *locality* at a scale of 1:25,000 is to be provided. This map is to detail the location of the action proposed, landscape features including rivers, swamps, wetlands, any locally significant sites of *subject species, populations or ecological communities*, and areas of high human activity such as townships and major roads. This map shall incorporate the area within a radius of 5km from the subject site. All available historical records are to be included of *subject species, populations of ecological communities* sourced from various databases and other sources are to be included on this map.

2.1 Land tenure information

The land tenure across the *study area* is to be described and any limitations to sampling across the *study area* resulting from this tenure (e.g. denied access to private land) shall be noted.

3 INITIAL ASSESSMENT

3.1 Identifying subject species and populations

For the purposes of this Evaluation of Impacts, the species listed in Table 1 are to be addressed as *subject species*:

Table 1. List of *subject species*.

SPECIES	SCIENTIFIC NAME	STATUS
FAUNA		
Little Whip Snake	*Suta flagellum*	Vulnerable
Pink-tailed Worm-lizard	*Aprasia parapulchella*	Vulnerable
Striped Legless Lizard	*Delma impar*	Vulnerable
Grassland Earless Dragon	*Tympanocryptis pinguicolla*	Endangered
Brown Treecreeper	*Climacteris picumnus victoriae*	Endangered
Diamond Firetail	*Stagonopleura guttata*	Vulnerable
Hooded Robin	*Melanodryas cucullata cucullata*	Vulnerable
Speckled Warbler	*Pyrrholaemus sagittatus*	Vulnerable
Flame Robin	*Petroica phoenicea*	Vulnerable
Scarlet Robin	*Petroica boodang*	Vulnerable
Little Eagle	*Hieraaetus morphnoides*	Vulnerable
Square-tailed Kite	*Lophoictinia isura*	Vulnerable
Gang-gang Cockatoo	*Callocephalon fimbriatum*	Vulnerable
Glossy Black-cockatoo	*Calyptorhynchus lathami*	Vulnerable
Superb Parrot	*Polytelis swainsoni*	Vulnerable
Barking Owl	*Ninox connivens*	Vulnerable
Powerful Owl	*Ninox strenua*	Vulnerable
Scarlet Robin	*Petroica boodang*	Vulnerable
Varied Sittella	*Daphoensitta chrysoptera*	Vulnerable
Squirrel Glider	*Petaurus norfolcensis*	Vulnerable
RegentHoneyeater	*Xanthomyza phrygia*	Endangered
Eastern Bentwing Bat	*Miniopterus schreibersii oceanensis*	Vulnerable
Eastern False Pipistrelle	*Falsistrellus tasmaniensis*	Vulnerable
Yellow Bellied Sheathtailed bat	Saccolaimus flaviventris	Vulnerable
Greater Long eared Bat	*Nyctophilus timoriensis*	Vulnerable
Greater Broad Nosed bat	*Scoteanax rueppellii*	Vulnerable
Golden Sun Moth	*Synemon plana*	Endangered
FLORA		
Black Gum	*Eucalyptus aggregata*	Vulnerable
Yass Daisy	*Ammobium craspedioides*	Vulnerable
Aromatic Peppercress	*Lepidium hyssopifolium*	Vulnerable
Doubletail Buttercup	*Diuris aequalis*	Endangered
Austral Toad Flax	*Thesium australe*	Endangered
Endangered Ecological Communities		
White Box, Yellow Box, Blakely's Red Gum Woodland		
Natural Temperate Grassland of the Southern Tablelands (NSW and ACT) (EPBC community)		

One of the roles of the Evaluation of impacts is to determine which species, populations or ecological communities may be utilising, or present, on a development site. The entities to be considered for inclusion in the list of subject species, populations and ecological communities are listed in Table 2. This list is not exhaustive and other entities may also need to be included for assessment on the basis of desktop and habitat analyses and the outcomes of fieldwork.

Table 2. List of other entities for consideration as *subject species, populations or ecological communities.*

SPECIES	SCIENTIFIC NAME	STATUS
FAUNA		
Rosenberg's Goanna	*Varanus rosenbergi*	Vulnerable
Koala	*Phascolarctos cinereus*	Vulnerable
Tiger Quoll	*Dasyurus maculatus*	Vulnerable
Myotis macropus	*Southern Myotis*	Vulnerable
Turquoise parrot	*Neophema pulchella*	Vulnerable
Swift Parrot	*Lathamus discolor*	Endangered
FLORA		
Dwarf Kerrawang	*Rulingia prostrata*	Endangered
Button Wrinklewort	*Rutidosis leptorrhynchoides*	Vulnerable
Silky Swainson Pea	*Swainsona sericea*	Vulnerable
Mountain Swainson Pea	*Swainsona recta*	Endagered
Tarengo Leek orchid	*Prasophyllum petilum*	Endangered
Snow Gum – Black Sallee Grassy Woodlands		

In determining whether the entities listed in Table 2, as well as other entities, should also be addressed as *subject species, populations and ecological communities*, consideration shall be given to the habitat types present within the *study area*, recent records of threatened species, populations or ecological communities in the *locality* and the known distributions of threatened species, populations and ecological communities. This analysis and its conclusion are to be documented in the Evaluation of Impacts.

Databases such as the DECCW Atlas of NSW Wildlife and BioNet, as well as databases held by the Australian Museum and Royal Botanic Gardens, should be consulted to assist in compiling the list of possible entities to be analysed. It should be noted that if the DECCW Atlas is the only database that is referred to, due to data exchange agreements, the data provided by DECCW will only include that for which DECCW is a custodian. In many cases, this may only be a small subset of the data available. Other databases must also be consulted to create a comprehensive list of entities for consideration as *subject species, populations or ecological communities*.

3.2 Identifying habitats

In describing the *study area*, consideration shall be given to the previous land uses and the effect of these land uses on the *study area*. Relevant historical events may include fire, clearing, logging, slashing, recreational use and agricultural activities.

A description of habitats including such components as the frequency of tree hollows, the presence of wetlands, the density of understorey vegetation, the composition of the ground cover, the soil type and the presence of heath and permanent or ephemeral swamps shall be given. The condition of these habitats within the *study area* shall be discussed, including the prevalence of introduced species. A description of the habitat requirements of threatened species, populations or ecological communities likely to occur in the *study area* shall be provided.

Any areas which may provide habitat connectivity between the *study area* and adjacent areas of likely habitat for *subject species, populations or ecological communities* shall be identified and described.

In defining the *study area*, consideration shall be given to possible *indirect impacts* of the proposed action on species/habitats in and surrounding the *subject site*. These could include impacts arising from altered fire and hydrology regimes, soil erosion or pollution, fencing, habitat fragmentation and disruption of wildlife movement corridors, edge effects, altered light and noise regimes, disturbance of roosting areas or other impacts due to increased use of the area by humans, and the impacts of increased levels of domestic and feral predators.

4 SURVEY

4.1 Requirement to survey

A flora and fauna survey is to be conducted in the *study area*. Targeted surveys shall be conducted for all *subject species, populations and ecological communities* determined in accordance with Section 3. Previous surveys and assessments may be used to assist in addressing this requirement. However, the efficacy of such previous surveys and assessments in meeting this requirement must be described in full. These previous surveys do not negate the need for the additional targeted survey work set out in Appendix 1 of these DGRs.

Particular attention shall be paid to the timing and climatic conditions for conducting fauna surveys including invertebrates, as many of the *subject species* will only be present or detectable for a few months each year or during certain climatic conditions. Additional advice on these matters should be sought from the DECCW contact officer.

Identification of all species is essential. Identification to genus only is not acceptable. Species of taxonomic uncertainty shall be confirmed by a recognised authority such as the Australian Museum or National Herbarium at the Royal Botanic Gardens, Sydney.

4.2 Documentation of survey effort and technique

Survey technique(s) shall be described and a reference given, where available, outlining the survey technique employed.

Survey site(s) shall be identified on a map with a clear legend. The size, orientation and dimensions of quadrat or length of transect shall be clearly noted for each type of survey technique undertaken. Full AMG grid references for the survey site(s) shall be provided.

DECCW survey proformas are to be used by field staff when applying a range of standard fauna survey techniques. Copies of standard proformas are included in Appendix 2 to these DGRs. Digital copies of these proformas can be requested from the nominated DECCW contact officer. These proformas shall be used by field staff when undertaking fauna surveys and completed data sheets are to be included as an appendix to the Evaluation of Impacts.

The time invested in each survey technique shall be summarised in the Evaluation of Impacts, based on completed proformas, e.g. number of person hours / transect, duration of call playback, number of nights that traps are set.

It is not sufficient to aggregate all time spent on all survey techniques. Effort must be expressed separately for each survey technique that is applied.

Personnel details including name of surveyor(s), contact phone number, qualifications and experience must be included. The person who identified records (e.g. Anabat, hair tubes, scat analysis) shall also be identified in this manner.

Environmental conditions during the survey shall be noted from the commencement of each survey technique until its completion. These conditions must be documented in the Evaluation of Impacts.

An assessment of the efficacy of each survey regime in detecting each species under the intensity utilised by the study is to be provided. The effect of the season and weather at the time of the field survey shall be considered with respect to the adequacy of survey results. An assessment will also be made of the adequacy of the survey and background information used to assess the likely area of use (home range) for each *subject species, population or ecological community*, and the areas providing habitat connectivity.

A full list of all flora and fauna species recorded during the course of surveys shall be included (such information is indicative of the habitat quality of the site). Completed Atlas of NSW Wildlife cards are to be provided for each threatened species record in any survey conducted for the purposes of the EA. For confidentiality, these cards are not to be included in the Evaluation of Impacts but rather shall accompany the Evaluation of Impacts when supplied to the DECC.

4.3 Specific survey requirements

Appendix 1 details the specific survey requirements for the *subject species, populations or ecological communities* identified in Table 1 of these DGEARs. These survey requirements can determine the presence of *subject species, populations or ecological communities* known or likely to be in the *study area* and/or can provide contextual information on habitats to allow appropriate assessment of impacts at a broader scale. The flora and fauna survey of the *study area* must include the use of these survey methods.

You are advised that discussions between the consultant(s) engaged to prepare the Evaluation of Impacts and DECCW may be necessary in order to derive an appropriate survey regime for some of these requirements, and to confirm the survey regimes proposed for any additional *subject species, populations and ecological communities* derived by analysis as part of this Evaluation Of Impacts.

5 ASSESSMENT OF LIKELY IMPACTS ON THREATENED SPECIES, POPULATIONS AND ECOLOGICAL COMMUNITIES

For all *subject species, populations and ecological communities*, the Evaluation of Impacts shall describe the following:

a. the location, nature and extent of habitat removal or modification which will result from the action proposed;

b. the likely and potential impact of the removal of habitat. Particular attention shall be given to the loss of:

    i. Natural temperate grasslands , White Box, Yellow Box, Red Gum Woodlands & Tableland Basalt Forest

    ii. Grassland habitat for Pink-tailed Worm Lizard, Little Whip Snake, Grassland Earless Dragon, Striped Legless Lizard and Golden Sun Moth.

iii. the likelihood of and extent of loss of hollow-bearing trees, foraging habitat and termite mounds utilised for breeding, roosting or denning by threatened fauna such as micro-chiropteran bats, Squirrel Gliders, Superb Parrot and small woodland birds.

iv. Native grassland habitat for the Button Wrinklewort, Mountain Swainson Pea, Silky Swainson pea, Tarengo Leak Orchid.

v. Similarly, attention is to be given to the likelihood of and extent of loss of food resources and the impact this may have on the *subject species, populations or ecological communities.*

c. Any direct and indirect impacts of the proposal including:

i. Any potential indirect impact on the viability of breeding/ roosting habitat of micro-bats known to occur in and around the area.

ii. the fragmentation or isolation of *local populations* and/or *local occurrences*, and the increased distance required for the movement of individuals/genetic material between habitat patches,

iii. change in vegetation floristics and structure resulting from edge effects,

iv. altered hydrology regimes (including increased runoff and raising or lowering of the water table),

v. soil erosion and pollution,

vi. disturbance to feeding or nesting/breeding of species,

vii. trampling or other impacts due to increased use of the area by humans, and native grassland habitats, Box gum woodlands or other EEC.

viii. habitat fragmentation and disruption of wildlife movement corridors and pollination mechanisms,

ix. altered light and noise regimes,

x. the likely contribution of the action proposed to the threatening processes already acting on populations of those *subject species or populations* and occurrences of *subject ecological communities* in the *locality*.

All of the above contextual information (which can be incorporated into Sections 5.1 - 5.5 below) will assist with the assessment of cumulative impacts on the *subject species, populations and ecological communities.*

5.1 Assessment of species likely to be affected

This requirement allows refinement of the list of *subject species or populations* (given the outcome of survey and analysis of likely impacts) in order to identify which threatened species or populations may be affected, and the nature of the impact.

The remaining requirements in this section (5.2 – 5.5) need only be addressed for those threatened species or populations that are likely to be affected by the proposal.

5.2 Discussion of local and regional abundance

5.2.1 Discussion of other known local populations

A discussion of other known *local populations* in the *locality* shall be provided. The long-term security of other habitats shall be examined as part of this discussion. The relative significance of the *subject site* for the *subject species, populations and ecological communities* in the *locality* shall

be discussed. It is essential that the Evaluation of Impacts includes some surveys conducted beyond the *study area* to clarify the conservation significance of the *subject site* to the *subject species and populations*.

The need for off-site surveys to provide context to the anticipated impacts of the *proposal* may also be required for other threatened species recorded during the surveys of the *study area* for the Evaluation of impacts.

5.2.2 Discussion of habitat utilisation
An estimate of the number of individuals of each *subject species* utilising the *study area* shall be provided as well as a description of how these individuals use the *study area* (e.g. residents, transients, adults, juveniles, nesting, foraging). A discussion of the significance of these individuals to the viability of the *subject species* in the *locality* shall be provided.

5.2.3 Description of vegetation
The vegetation present within the *study area* and the surface area covered by each vegetation community shall be mapped and described. Reference to the vegetation classification system used (e.g. Specht, Benson, Keith) and to the ecological communities determined as endangered by the NSW Scientific Committee shall be provided. Classification must have regard to both structural and floristic elements.

5.2.4 Discussion of corridors
Particular attention shall be given to identifying movement corridors for *subject species* within the *study area*. The impact of the proposal on these corridors and the resulting impact on the resident *subject species* shall be discussed.

5.3 Assessment of habitat

5.3.1 Description of habitat values
Specific habitat features in the *study area* shall be described and quantified (e.g. frequency and location of stags, hollow bearing trees, culverts, rock shelters, rock outcrops, crevices, caves, drainage lines, soaks, area of ecological communities etc.), as well as the density of understorey vegetation and groundcover.

The condition of the habitat within the *study area* shall be discussed, including the prevalence of introduced species, species of weeds present and an estimate of the total weed cover as a percentage of each vegetation community, whether trampling or grazing is apparent, effects of erosion, prevalence of rubbish dumping, history of resource extraction or logging and proximity to roads. Details of the *study area's* fire history (e.g. frequency, time since last fire, intensity) and the source of fire history (e.g. observation, local records), shall be provided.

5.3.2 Distribution and condition of regional habitats
For the habitats of *subject species and populations* found in the study area, the Evaluation of Impacts shall discuss the distribution and condition of similar habitats in the region. For the *subject ecological communities* found in the study area, the Evaluation of Impacts shall discuss the distribution and condition of these ecological communities in the region. Regional information may be obtained from existing datasets and from other sources.

5.4 Discussion of conservation status

Assessment shall include reference to the threatening processes that are generally accepted by the scientific community as affecting the *subject species, population or ecological community* and which are likely to be caused or exacerbated by the *proposal*. Assessment shall also include reference to any approved or draft recovery plans which may be relevant to the *proposal*. Up-to-date lists and copies of approved and draft recovery plans are available on the DECC website www.environment.nsw.gov.au by following the links to threatened species.

5.5 Description of feasible alternatives

All feasible alternative location for infrastructure including but not limited to transmission lines, pipelines and generators should be explored taking into account all known constraints.

6 IMPACT AMELIORATION

6.1 Description of ameliorative measures

In accordance with the Draft Guidelines for Threatened Species Assessment objective of Improve or Maintain, the ameliorative measures described for this development should meet the improve or maintain test for biodiversity values.

6.1.1 Long term management strategies
Consideration shall be given to the information contained in approved and draft recovery plans or threat abatement plans for existing taxa, known or likely to occur in the *study area*, and whether any recommendation is applicable to the *proposal.*

The development of long-term management strategies shall be considered to protect areas within the study area which are of particular importance for the *subject species, populations or ecological communities* likely to be affected by the *proposal.* This may include proposals to restore or improve habitat on site where possible. If mitigation is to include rehabilitation of the site, then the rehabilitation strategy shall be detailed.

Any measures proposed to mitigate the effect of the proposal on *local populations* of threatened species and populations and/or *local occurrences* of ecological communities shall be described. The potential effectiveness of any such amelioration in maintaining a viable *local population* and/or *local occurrence* in the short, medium and long term shall be discussed (e.g. fauna underpasses, vegetation management).

6.1.2 Compensatory strategies
If significant modification of the *proposal* to minimise impacts on *subject species, populations or ecological communities* is not possible, then compensatory strategies shall be considered. These may include other off-site or local area proposals that contribute to long term conservation of the *subject species, populations or ecological communities.*

The areas proposed to be used for compensatory strategies must be described in full including a detailed description of their biodiversity, tenure and conservation status. These areas should be assessed in accordance with the Principles for the use of biodiversity offsets in NSW, which can be found on the following link on the DECCW significant local populations of *subject species and populations* or significant local occurrences of *subject ecological communities* as determined by the EVALUATION OF IMPACTS should aim to:

i. minimise the impacts by considering all possible alternatives to the *proposal*, such that a significant impact is not likely; and

ii. manage the remaining habitat (if any) to ensure that the *local population* and/or *local occurrence* continues to exist in the long term.

The translocation of *subject species, populations and ecological communities* is only supported by DECCW in specific conservation programs (e.g. recovery planning).

7 ADDITIONAL INFORMATION

7.1 Qualifications and experience

An evaluation of Impacts must include details of the qualifications and experience in threatened species conservation of the person preparing the statement and of any other person who has conducted research or investigations relied on in preparing the statement.

7.2 Licensing matters relating to flora and fauna surveys

Persons conducting flora and fauna surveys must have appropriate licences or approvals under relevant legislation. The relevant legislation and associated licences and approvals that may be required are listed below:

National Parks and Wildlife Act 1974:

- General Licence (Section 120) to harm or obtain protected fauna (this may include threatened fauna).
- Licence to pick protected native plants (Section 131).
- Scientific Licence (Section 132C) to authorise the carrying out of actions for scientific, educational or conservation purposes.

Threatened Species Conservation Act 1995:

- Licence to harm threatened animal species, and/or pick threatened plants and/or damage the habitat of a threatened species (Section 91).

Animal Research Act 1985:

- Animal Research Authority to undertake fauna surveys.

Appendix 1: Survey Requirements for Subject Species - DGRs for Dalton Energy Project

SPECIES	SURVEY REQUIREMENTS
Pink-tailed Worm-lizard and Little Whip Snake	Surveys of the *subject site* and *study area* shall be undertaken for this species. All rocky slopes should be systematically surveyed. This shall involve rock rolling and searching under logs and debris. Surveys shall be undertaken between mid-August and the end of October preferably after rain. Daily temperatures shall not exceed 25^0C during the survey period. Rocks, logs and debris shall be replaced carefully to sustain habitat integrity. Surveys of the *locality* for habitat of the species shall be undertaken. These shall involve determining the extent of potentially suitable habitat from aerial photographs or other means, and ground-truthing selected sites to validate habitat suitability, condition and extent. The sites sampled shall be used to provide context to the habitat affected by the action proposed.
Striped Legless Lizard *Delma impar*	Pitfall trapping for *Delma impar* should be undertaken for 6 weeks, starting in early to mid November and extending through to mid/late December. Pitfall traps or funnel traps should be placed in suitable habitat being natural temperate grassland or nearby secondary grassland, with a preference for denser Kangaroo grass *Themeda australis* or other grassland, including *Phalaris*. Traps should be positioned in cross-shaped arrays of 5 traps each, 10 metres apart, with a trap at the centre and drift fencing extending 5 metres past the outside traps. Traps must be checked daily. In addition, roof tiles should be placed within likely habitat for at least 4 months prior to checking. Checking of tiles should be undertaken at least fortnightly throughout spring and early summer.
Grassland Earless Dragon *Tympanocryptis pinguicolla*	Spider-tubes should be used to survey areas of suitable habitat, being natural temperate grassland or nearby secondary grassland, with a preference to lower, open areas dominated by wallaby grasses. Survey season should be for 10 weeks from February to April with tubes checked twice a week. Density of tubes should approximate 2/ha and be placed within transects of 10 tubes per transect spaced ten metres apart. Tubes should be left at least 2 weeks and no longer than one month prior to checking. In areas where grass is dense, grass around the tubes should be whipper-snipped for a radius of 1 metre around each tube to facilitate location and use by dragons. All spiders found in tubes should be removed at least 10 metres to reduce chance of re-colonisation.
Squirrel Glider	The consultant needs to determine the distribution and abundance of the species on the subject site and its status in the region. Squirrel Gliders may occur across a wide variety of forest and woodland vegetation types. Live-trapping in trees is the preferred survey method for detecting Squirrel Gliders. Traps should be either large Elliott box traps or wire mesh 'bandicoot' traps (200 mm wide x 170 mm tall x 500 mm long; Figure 2) (manufactured by R.E. Walters Pty. Ltd., Sunshine, VIC). Live-trapping is a preferred sampling technique as it allows for unequivocal identification of animals. This is particularly important as the Squirrel Glider is very similar in appearance to the smaller Sugar Glider, P. breviceps. If definite identification cannot be made then any captured animals should be photographed and measured. Subsequent identification of the animal in question can then be made by an appropriate expert.

SPECIES	SURVEY REQUIREMENTS
	Bait should consist of a mixture of peanut butter, honey and rolled oats. A honey and water solution may be sprayed above and below the trap entrance. The number of traps set at a site will vary according to the extent of suitable habitat, the area over which possible den sites are present, and the scale of the proposed clearing or activity. Traps should ideally be positioned horizontally in low tree branches. Traps must be attached to trees and spaced approximately 50-100 m apart in a transect or grid layout, as the habitat allows. Traps must be set for a minimum period of 3-4 consecutive nights. On each day traps should be set at dusk and checked the following morning. Where possible, traps should not be left open during daylight hours, particularly during periods of hot weather. In situations where the same animals are being repeatedly trapped, individual trap stations may need to be closed. If the species is present, given the rarity of the species in the region, any proposed development must avoid direct impacts on the species in the first instance, minimise any unavoidable or indirect impacts, and then set up processes which establish long-term conservation of the species on-site.
Little Eagle, Square-tailed Kite,	Diurnal bird surveys across the subject area targeting woodland and forest for nesting sites. Opportunistic surveys should be conducted in the locality given the large home range of the species.
Regent Honey eater	The regional significance of the subject site for the Regent Honeyeater is unknown. There are potential breeding and foraging habitats on the subject site that should be surveyed using diurnal fixed-width transect or point-count surveys and call playback techniques, as the species responds to taped calls during the breeding season. Whilst surveys can be conducted at any time of the year, the optimal time is spring and summer during the breeding season.
Brown Treecreeper, Diamond Firetail, Hooded Robin, Speckled Warbler and Varied Sittella.	Diurnal bird census shall be undertaken in the early morning and/or late afternoon within the *subject site* on three occasions each separated by a period of one week. Each census shall comprise observations for birds, including call recognition, for a period of 45 minutes at a minimum of three locations spread across the subject site. Surveys can be undertaken at any time of the year, but shall avoid high-wind and/or rainy days.
Scarlet Robin	Diurnal bird census shall be undertaken in the early morning and/or late afternoon within the *subject site* on three occasions each separated by a period of one week. Each census shall comprise observations for birds, including call recognition, for a period of 45 minutes at a minimum of three locations spread across the subject site. Additional opportunistic bird census shall be employed across the *study area* and *locality* during the course of other surveys for the EA. Surveys should be concentrated on ridges, hills and foothills. Surveys should be between July to January however can be undertaken at any time of the year, but shall avoid high-wind and/or rainy days.
Barking Owl & Powerful Owl	Nocturnal call playback (1 site per 100 ha) with an initial listening period of 10 min then play the call of each subject species separated by at least a 2 min listening period, then finish with a 10 minute listening period. Identify and map all hollow-bearing trees (potential nest trees) on the subject site and estimate the availability of hollow-bearing trees in the locality.
Gang Gang Cockatoo /	Undertake diurnal bird surveys across the study area and nesting assessments using a

SPECIES	SURVEY REQUIREMENTS
Glossy Black-cockatoo/ Superb Parrot	combination of stagwatching and listening for calls of the birds returning to nests in the late afternoon during the known breeding season of the species, to ascertain the locations of any nest sites in the study area. These surveys should target hollow-bearing trees with hollows of suitable size (>10cm diameter) for the species that are to be removed for the proposal or which lie within 50m of areas to be disturbed by the proposal. Estimate the availability, condition and security of potential breeding habitat for the species in the locality by ground-truthing existing vegetation mapping datasets.
Eastern False Pipistrelle, Eastern Bent Wing Bat, Large footed Myotis. Greater Broad nosed bat, Yellow Bellied Sheath Tailed Bat Greater long eared bat	Surveys using anabat recorders and stag watching should aim to identify the number and location of roost sites for the subject bats and identify important foraging habitat in the study area and the locality. If required, the DECCW can provide further advice on bat survey techniques to acquire this information. Surveys of the subject site, study area and locality shall be undertaken for hollow-bearing trees. This shall involve intensive searches for hollow-bearing trees in the subject site and study area. Representative sampling of the locality for hollow-bearing trees shall involve the use of transects in selected locations and the gathering of data in conjunction with ground-truthing for endangered ecological communities. The number of hollow-bearing trees recorded shall be used to provide context to the potential breeding habitat affected by the action proposed.
Golden Sun Moth	Surveys of the *subject site* and *study area* shall be undertaken for this species. These surveys should target areas with higher than 40% *Austrodanthonia* in the groundcover. Areas of habitat should be hand-netted during known flight periods. The flight period for this species is short therefore surveys should be undertaken when other known populations in the area are flying. The consultant should discuss these periods with the DECCW prior to the survey being conducted. Surveys of the *locality* for habitat of the species shall be undertaken. These shall involve determining the extent of potentially suitable habitat from aerial photographs or other means, and ground-truthing selected sites to validate habitat suitability, condition and extent. The sites sampled shall be used to provide context to the habitat affected by the action proposed.
ENDANGERED ECOLOGICAL COMMUNITIES	SURVEY REQUIREMENTS
Yellow box white box Blaklyis red gum woodlands, Natural temperate grasslands, and Tableland Basalt Forest.	Surveys shall identify the extent and condition of this ecological community in the *subject site*, *study area* and *locality*. This shall involve the use of vegetation surveys in the *subject site* and the *study area*. The use of existing datasets held by DECCW in combination with ground-truthing of selected sites within areas mapped by DECCW as the ecological community is recommended for surveys of the *locality*. The sites sampled shall be used to provide context to the ecological community affected by the action proposed. Surveys can be undertaken at any time of the year under varied seasonal conditions.
FLORA	SURVEY REQUIREMENTS
Button Wrinkle wort, Yass Daisy and Aromatic	Systematic surveys using evenly spaced transects located about 10 m apart through all areas of woodland and grassland.

SPECIES	SURVEY REQUIREMENTS
Peppercress	
Austral Toad flax	Systematic surveys using evenly spaced transects located about 10m apart through all areas of wet Kangaroo grass and any other damp areas located in the study area. DECCW should be consulted to confirm flowering times with known population and seasons, and appropriate survey methods.
Silky Swainson Pea (*Swainsona sericea*), Mountian Swaison Pea (Swainsona recta), and Tarengo Leek Orchid (*Prasophyllum petilum*),	Systematic surveys using evenly spaced transects located about 10 m apart through all areas of woodland/grassland must be undertaken. DECCW should be consulted to confirm flowering times with known population and seasons, and appropriate survey methods.
Doubletail Buttercup, (*Diuris aequalis*)	Systematic surveys using evenly spaced transects located about 10 m apart through all areas of woodland/grassland must be undertaken. Surveys should be undertaken between late October to early November, between the known flowering season.

Appendix 2: Examples of suitable survey pro-formas

DIURNAL HERPETOFAUNA CENSUS SURVEY PROFORMA

Survey Details

Date of survey _____

Name of surveyor _____ Contact number _____

Number of surveyors _____ _____

Total effort expressed in person-hours _____ Total effort expressed in number of rocks/logs rolled _____

Location Details

Location (including basic habitat) description _____

_____

_____

_____

Map number _____ Map name _____

Type of survey, e.g. transect or quadrat _____ AMG Zone _____

Active or passive search _____ Size of survey area (ha) _____

Survey area
Eastings (6 digits) _____ Northings (7 digits) _____

Eastings (6 digits) _____ Northings (7 digit) _____

Start time (24hr) _____ End time (24 hr) _____

Weather Details

At start of survey, record: Cloud cover* _____

Wind direction and speed* _____ Rain* _____

Temperature (°C) _____ Moon* _____

At end of survey, record: _____

Temperature (°C) _____

Comments _____

_____

Appendix 2: Examples of suitable survey pro-formas

Species name (Scientific/Common)	Ob. type*	MH type*	Grid reference (full AMGs i.e. Eastings and Northings)	Accuracy

* See Appendix 3: Standard reporting codes

Appendix 2: Examples of suitable survey pro-formas

DIURNAL BIRD CENSUS SURVEY PROFORMA

Survey Details

Name of surveyor _____ Contact number _____

Number of surveyors _____ Date of survey _____

Total effort expressed in person hours _____ Number of hectares covered or transect or point dimensions _____

Location Details

Location description _____

Map number _____ Map name _____

Full AMG reference(s) for survey site or transect

AMG Zone _____

Start details _____ Finish details _____

Easting (6 digits) _____ Easting (6 digits) _____

Northing (7 digits) _____ Northing (7 digits) _____

Start time (24hr) _____ End time (24 hr) _____

Weather Details

At start of survey, record:

Cloud cover* _____

Wind direction and speed* _____ Rain* _____

Temperature (°C) _____ Moon* _____

At end of survey record: _____

Temperature (°C) _____

Comments _____

Species name	Ob. type*	MH type*	Grid reference (full AMGs)	Accuracy

* See Appendix 3: Standard reporting codes

Appendix 2:Examples of suitable survey pro-formas

Species name	Ob. type*	MH type*	Grid reference (full AMGs)	Accuracy

* See Appendix 3: Standard reporting codes

Appendix 2: Examples of suitable survey pro-formas

DIURNAL HOLLOW-BEARING TREE CENSUS SURVEY PROFORMA

Survey Details

Date of survey _____

Name of surveyor _____ Contact number _____

Number of surveyors _____ _____

Total effort expressed in person-hours _____

Location Details

Location (including basic habitat) description _____

_____

_____

_____

Map number _____ Map name _____

Type of survey, e.g. transect or quadrat _____ AMG Zone _____

_____ Size of survey area (ha) _____

Survey area
Eastings (6 digits) _____ Northings (7 digits) _____

Eastings (6 digits) _____ Northings (7 digit) _____

Start time (24hr) End time (24 hr) _____

Appendix 2: Examples of suitable survey pro-formas

Tree No.	Species (Scientific Name)	Number, sizes and types of hollows *	Grid reference (full AMGs i.e. Eastings and Northings)	Accuracy

* See Appendix 3: Standard reporting codes

Appendix 2: Examples of suitable survey pro-formas

DIURNAL TERMITE MOUND CENSUS SURVEY PROFORMA

Survey Details

Date of survey _____

Name of surveyor _____ Contact number _____

Number of surveyors _____ _____

Total effort expressed in person-hours _____

Location Details

Location (including basic habitat) description _____

_____

_____

_____

Map number _____ Map name _____

Type of survey, e.g. transect or quadrat _____ AMG Zone _____

_____ Size of survey area (ha) _____

Survey area
Eastings (6 digits) _____ Northings (7 digits) _____

Eastings (6 digits) _____ Northings (7 digit) _____

Start time (24hr) End time (24 hr)

Termite mound no.	Grid reference (full AMGs)	Accuracy

Appendix 2: **Examples of suitable survey pro-formas**

Appendix 2: Examples of suitable survey pro-formas

VERTEBRATE FAUNA SURVEY OPPORTUNISTIC RECORDS

Survey name _____ Fauna surveyors _____

Surveyor's contact details _____ Call analysis _____

AGM Zone _____

Date	Time	Site #	Easting (full 6 digits)	Northing (full 7 digits)	Species Name	No Ind	Ob. type*	MH* type*	Notes/Field No**

* See over ** Include initials of observer and any other information that will help relocation of site.

Appendix 2: Examples of suitable survey pro-formas

Cloud cover. Record cloud cover in eights of sky.

Moon. Record using the following codes. 0=None, 1=1/4 moon, 2=1/2 moon, 3=3/4 moon, 4=full moon.

Wind direction and speed. Record wind direction to nearest cardinal point. Record wind speed using the following codes. 0=calm 1= Light, leaves rustle 2= Moderate, branches move 3=Strong, tops of trees move

Rain. Record using the following codes. 0=none, 1=drizzle - light, 2=drizzle - heavy 3=heavy rain

Sizes of hollows. Record using the following codes. S=Small (1-5cm diameter), M=Medium (5-15cm diameter), L=Large (greater than 15cm diameter).

Types of hollows. Record using the following codes. T=Trunk hollow, B=Branch hollow

Observation type

Use the following codes:

O	Observed (sighted)	R	Road kill	F	Tracks, scratching
W	Heard call	D	Dog kill	Z	In raptor/owl pellet
X	In scat	C	Cat kill	M	Miscellaneous
P	Scat	V	Fox kill	E	Nest or roost
T	Trapped or netted	K	Dead	B	Burnt
H	Hair or feathers	S	Shot	Y	Bones or teeth
A	Stranded/beached	I	Fossil/subfossil	N	Not located

MH (microhabitat) type

Use the following codes:

AC	Flying above canopy	IB	In burrow	OB	On (beach) sand
BR	In/on bridge	IC	In cave	OL	On log
BU	In building	IG	In grass	OR	On rock
CK	Crevice in rock	IH	In tree hollow	OW	Over water
CL	Crevice in log	IL	In litter	RD	On road
DA	Farm/fire dam	IR	In reeds	TK	On trunk
DT	In dead tree (stag)	IS	In soil	UB	Under bark
EW	Edge of water	IT	In (live) tree	UC	Upper canopy
FC	In/on post or stump	IW	In water	UG	Undergrowth
FL	Flying within canopy	LC	Lower canopy	UL	Under log
GR	On ground	LS	Low shrub	UR	Under rock
HS	High shrub	MC	Mid canopy	UT	Under iron
				WH	Waterhole

PO Box 622, Queanbeyan NSW 2620
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Attachment D - Guidance Material

Assessing Environmental Impact

Air

- Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (DEC 2005)
- Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (DEC 2007)

Greenhouse Emissions

- The Greenhouse Gas Protocol: Corporate Standard, World Council for Sustainable Business Development & World Resources Institute http://www.ghgprotocol.org/standards/corporate-standard
- National Greenhouse Accounts (NGA) Factors, Australian Department of Climate Change (Latest release), http://climatechange.gov.au/workbook/index.html

Water quality

- National Water Quality Management Strategy: Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000)
- NWQMS Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC 2000)
- NSW Water Quality and River Flow Objectives
- The relevant targets within the State Water Management Outcomes Plan

Noise and vibration

- NSW Environmental Criteria for Road Traffic Noise (EPA, 1999)
- NSW Industrial Noise Policy (EPA, 2000)
- NSW Interim Construction Noise Guideline (DECC, 2009)

Construction

- Managing Urban Stormwater - Soils and Construction", NSW Landcom, Fourth Edition, March 2004.

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).

Waste

- Waste Classification Guidelines (DECC, 2008).

Assessing Threatened Species Impacts

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

NSW GOVERNMENT | Office of Water

Neville Osborne
Department of Planning
GPO Box 39
SYDNEY NSW 2001

Contact: Tim Baker
Phone: (02) 6841 7403
Fax: (02) 6884 0096
Email: Tim.Baker@dnr.nsw.gov.au

Our ref: ER20980
Your ref: 10/06760-2

Attention: Ingrid Ilias

6 April 2010

Dear Ms Ilias

Subject: DALTON ENERGY PROJECT – ENVIRONMENTAL ASSESSMENT REQUIREMENTS

I refer to your letter dated 10 March 2010 detailing a Planning Focus Meeting (PFM) for the abovementioned project. Although the NSW Office of Water (NOW) was unable to attend the PFM this submission provides relevant information to support compilation of the Director Generals Requirements for the project.

Key Issues

NOW requires the Environmental Assessment (EA) for the proposal to demonstrate the following:

1. Identification of site water demands in terms of both volume and timing for life of project.
2. Adequate and secure water supply is available for life of project.
3. Existing and proposed water licensing requirements are in accordance with the *Water Act 1912*, *Water Management Act 2000* and NSW Inland Groundwater Water Shortages Zone Order No. 2, 2008.
4. A groundwater and surface water impact assessment on adjacent licensed water users, basic landholder rights, groundwater-dependent ecosystems and the surface water environment. This is to also include an assessment of potential impact on groundwater quality due to the evaporation pond and any other sources of contaminants to meet the requirements of the NSW State Groundwater Policy Framework.
5. Watercourse crossing construction is consistent with the NSW Rivers and Estuaries Policy and former DWE guidelines for controlled activity approvals http://www.water.nsw.gov.au/Water-Licensing/Approvals/Controlled-activities/default.aspx
6. A description and assessment of any potential requirement to intercept groundwater, including predicted dewatering volumes, zone of drawdown and associated impact, water quality and disposal methods.
7. Adequate mitigating and monitoring requirements to address surface and groundwater impacts.

NOW has not gained a clear understanding from the preliminary environmental assessment of how the project may address the above. The information provided in the background paper did not identify the water requirements or confirm the water sources for the proposal and the potential licensing and associated environmental assessment issues under the *Water Act 1912/ Water*

Management Act 2000. An expanded list of the key issues to be addressed in the environmental assessment is provided in Attachment 1.

NOW advises the project site is located within the Lachlan Fold Belt Groundwater Management Area 811 which is covered by the NSW Inland Groundwater Shortage Zones Order No. 2 2008 under the *Water Act 1912*. This embargo places restrictions on groundwater interception and exemptions for groundwater access which will need to be considered in the EA. NOW would encourage the proponent to contact NOW staff to determine the necessary groundwater licensing requirements for the proposed operations where applicable due to the implications of the embargo. Any proposal to source water from surface water sources is also likely to require consideration of licensing requirements under the *Water Act 1912*.

State Government Technical and Policy Documents

The proposal must address the NSW State Government natural resource management policies, as applicable. Policies to include but not to be limited to:

Relevant Policy

NSW Inland Groundwater Shortage Zones Order No. 2 (2008)

NSW State Groundwater Policy Framework Document (1997)

NSW State Groundwater Quantity Management Policy (1998)

NSW State Groundwater Quality Protection Policy (1998)

NSW State Groundwater Dependent Ecosystems Policy (2002)

Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000)

Australian and New Zealand Guidelines for Water Quality Monitoring and Reporting (2000)

Guidelines for the Assessment and Management of Groundwater Contamination (2007)

Guidelines for Groundwater Protection in Australia (1995)

MDBC Guidelines on Groundwater Model Development

The Department has provided this information to assist in the development of a comprehensive environmental assessment of the proposed development. For general enquiries please do not hesitate to contact myself on (02) 6841 7403.

Yours sincerely

Tim Baker

Senior Planning and Assessment Coordinator

ATTACHMENT 1 – ENVIRONMENTAL ASSESSMENT REQUIREMENTS

General Environmental Risk Analysis – the EA must include the following for all water-related aspects of the proposal:

- an environmental risk analysis to identify potential environmental impacts associated with the project (construction and operation);
- proposed mitigation measures and potentially significant residual environmental impacts after the application of proposed mitigation measures; and
- where additional key environmental impacts are identified through this environmental risk analysis, an appropriately detailed impact assessment of these additional key environmental impacts must be included in the EA.

Key issue: Water supply and water balance

The EA must include assessment of water supply and/or water interception and extraction against any Water Sharing Plan in force affecting the site or potential water supply to the proposal. A full description of water supply to all stages of the proposal must be included, which includes:

- water source(s) which may be used to supply water to the proposal, additional water requirements, and a checklist against any regulatory water sharing or other ministerial plans or other instruments applying to that water source
- explanation of any embargoes or full commitment declarations for the proposal, and any identified means to source water supply for the proposal
- examination of reliability of water supply to the proposal, including alternatives to site rainfall runoff harvesting in the event of drought
- explanation of water circuitry and means to segregate contaminated, sediment-laden and clean water volumes within the proposal and proposal site. This would require development of surface water management plan.

Key Issue: Groundwater Resource Protection

• **Groundwater** – the EA must include demonstration that the project is consistent with the principles of the NSW State Groundwater Policy Framework Document, the NSW State Groundwater Quality Protection Policy, the NSW State Groundwater Dependent Ecosystems Policy and the Draft NSW State Groundwater Quantity Management Policy. This must include, for the pre-, during, and post- development phases of the project the following:

- identification of surrounding water users and any groundwater dependent ecosystems;
- detailed explanation of potential groundwater volume which may be intercepted, piezometric level, water table heights and the direction of flow and quality, through project life and projections into the post development period, and any identified connected water sources impacted by extraction
- detailed explanation of groundwater drawdown or other impacts upon connected groundwaters.
- explanation of the site water balance for the proposal, including any changes to water balance inputs from rainfall runoff and/or groundwater seepage;
- detailed description of any proposed water supply system utilising groundwater as a source, and identification of licensing requirements;
- detailed analysis of any proposed dewatering if required for the project, identifying the magnitude and duration of pumping, the areal extent of water level drawdown, the likely

quality of extracted groundwater, alterations to site water balance, and the monitoring and reporting protocols to be adopted to meet licensing requirements;

- measures to prevent contamination of the groundwater.
- identification of potential and likely groundwater-dependent ecosystems, and any impact upon these ecosystems which may result from the proposal; this must include
  - Terrestrial vegetation with seasonal or episodic reliance on groundwater, and
  - Aquatic and riparian ecosystems in, or adjacent to, streams or rivers dependent upon the input of groundwater to minimum base flows

Key Issue: Watercourse Protection

The EA must include an assessment of 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, channel stability, 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.

Key Issue: Landform Rehabilitation

Rehabilitation, Final Landform Management – the EA must include:

- justification of the proposed final landform with regard to its impact on local and regional groundwater systems and surface water systems;
- a detailed description of how the site would be progressively rehabilitated and integrated into the surrounding landscape;
- detailed modelling of potential groundwater volume, flow and quality impacts of the presence of an inundated final void on identified receptors specifically considering those environmental systems that are likely to be groundwater dependent;
- a detailed description of the measures to be put in place to ensure that sufficient resources are available to implement the proposed rehabilitation; and
- the measures that would be established for the long-term protection of local and regional aquifer and surface water systems and for the ongoing management of the site following the cessation of the project.

Upper Lachlan Shire Council

All correspondence addressed to the General Manager, PO Box 10, Crookwell NSW 2583

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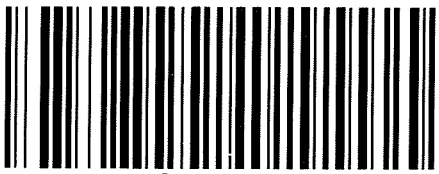
Our Ref: 15.1.35
Your Ref: 10/05760-2

26 March 2010



NSW Department of Planning
GPO Box 39
SYDNEY NSW 2001

Attention: Ingrid Ilias

Dear Madam

RE: DALTON ENERGY PROJECT - REQUEST FOR ENVIRONMENTAL ASSESSMENT REQUIREMENTS

Reference is made to your letter dated the 24 March 2010 regarding the above.

In accordance with Section 75F(4) of the EP&A Act please be advised that Council is in agreeance with the Director General's Requirements with the inclusion of the following additional key issues:

- Traffic and Transport
  - A detailed pavement and structure analysis to be undertaken on all affected sections of public road.
  - A road safety audit to be undertaken on all affected sections of public road.
  - An analysis of the horizontal and vertical alignment to determine the adequacy of the affected public road network for all expected traffic types.

  Reason: Provides the ability to assess potential impact on existing Council infrastructure.

- Noise Impacts
  - An analysis of the van den Berg effect on all residences within 2 km of the power station.

  Reason: Provides the ability to assess potential impact on existing residences in proximity to the development proposal.

- Hazards
  - Impact of bushfires on the power station and sub-station.
  - Bushfire ignition threats from the power station and sub-station.
  - Effluent management - construction and operational phases.

Reason: Provides the ability to assess potential impact and mitigation measures.

- Proposed Community Enhancement Program.

  Reason: To address issues which are directed at improving the quality of life for the people of the Shire; and preparedness to advocate for reasonable contributions towards the provision of community facilities and services from developments having a significant social impact on the Shire community.

For any further information or clarification please contact Council's Environment and Planning Section, during office hours.

Yours faithfully

Tina Dodson
Manager Environment and Planning
for
J K Bell
General Manager
Upper Lachlan Shire Council