Section 4

Issue Identification and Prioritisation

Preamble

This section describes how the environmental issues assessed in the Environmental Assessment were identified and prioritised. In summary:

(i) a comprehensive list of all relevant environmental issues was assembled through consultation with the local community and local and State government agencies, completion of preliminary environmental studies and a review of relevant legislation, planning documents and environmental guidelines;

(ii) a review of the project design and local environment was undertaken to identify risk sources and potential environmental impacts for each environmental issue;

(iii) an analysis of risk for each potential environmental impact was then completed with a risk rating assigned to each impact based on likelihood and consequence of occurrence; and

(iv) through a review of the allocated risk ratings and the frequency with which each issue was identified, the relative priority of each issue was determined, with this priority used to provide an order of assessment and breadth of coverage within Section 5.
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4.1 Introduction

In order to undertake a comprehensive Environmental Assessment of the proposed Narrabri Coal Seam Gas Utilisation Project, appropriate emphasis needs to be placed on those issues likely to be of greatest significance to the local environment, neighbouring landowners and the wider community. In order to ensure this has occurred, a program of community and government consultation, preliminary environmental studies and literature review was undertaken to identify relevant environmental issues and potential impacts. This was followed by an analysis of the risk posed by each potential impact in order to prioritise the assessment of the identified environmental issues within the Environmental Assessment.

4.2 Issue Identification

4.2.1 Introduction

Identification of environmental issues relevant to the development and operation of the Project involved a combination of consultation and background investigations and research. This included:

- consultation with surrounding landowners (Section 4.2.2.1);
- consultation with the wider local community (Section 4.2.2.2);
- consultation with State and local government agencies (Section 4.2.2.3);
- consultation with relevant community business people and representatives as part of a social impact assessment (Section 4.2.2.4);
- reference to relevant NSW government policies and guidelines (Section 4.2.3); and
- preliminary environmental studies (Section 4.2.4).

4.2.2 Consultation

4.2.2.1 Community Consultation

The Project has been developed with due consideration given to the local and regional community. Overall, the Proponent has received considerable community support during the exploration and development of gas resources within PEL238 and the Narrabri area.

Direct community consultation with respect to the Joint Venture’s Petroleum Assessment Lease Application (PALA) and the future potential developments of the CSG project occurred via a public meeting held in August 2005. More recent consultation with directly affected landholders has occurred during preliminary easement and access agreement negotiations at which point the viability of the proposed route was discussed in light of the individual landholder’s agricultural operations and future property plans. In each case, the proposed route that mitigates to the greatest extent the impacts on the normal operation of the freehold lands has been endorsed by the landholder.
Consultation with Forestry NSW, as the notional landholder of the Pilliga East and Bibblewindi State Forests, has been regular since the Joint Venture commenced operating the CSG Project. The Project has undergone the consideration of Forestry NSW in terms of route selection, impact assessment and its ramifications for commercial forestry operations.

The Joint Venture and the gas exploration activities undertaken within the Narrabri area have been well supported in the local press since the development of the Coonarah Gas Field, Pipeline and Wilga Park Power Station. As the operator of the CSG Project, the Proponent has gained significant recognition in the Narrabri area through various means including the extensive use of local service providers, direct and indirect employment and through community development and sponsorship of events and sporting teams.

4.2.2.2 Consultation with the Wider Community

The wider regional community has been kept well informed of the progress of the CSG exploration activities through coverage in the local newspaper, *The Narrabri Courier*, who have published many articles on the activities of both the Proponent and the Joint Venture over past 5 years.

Regional media coverage of the exploration and development activities has been frequent through the WIN and PRIME television news services whilst radio interviews with key management personnel has also been a valuable source of information for the regional community.

The preliminary environmental assessment and Part 3A application submitted to Department of Planning has been available to the public on the Department’s website.

All documents pertaining to the Proponent’s and Joint Venture’s exploration and development activities have been made available on the NSW Mineral Resources website in line with current NSW Government policy on freedom of information.

4.2.2.3 Consultation with Government Agencies

The Proponent has consulted with a wide range of local and State Government agencies during the development of the CSG Project and related environment management plans and applications. Further consultation with Government Agencies regarding their respective requirements for issues to be addressed in the Environmental Assessment has occurred via the Part 3A assessment process.

The Proponent formally sought a declaration of State Significance under State Environmental Planning Policy (Major Projects) 2005 (Major Projects SEPP) from the Director-General’s of NSW Department of Planning (DoP) via the submission of the Part 3A application and Preliminary Assessment Report in February 2007. A copy of each are reproduced as Appendix 2.
The DoP provided confirmation in April 2007 that the Project had been assessed as meeting the requirements of the Major Projects SEPP.

Further to the determination, of “major projects” status, in July 2007, the Department of Planning provided the requirements for the Project’s Environmental Assessment, known at the Director-General’s Requirements (DGRs). The DGR’s were formulated by DoP after the consideration of issues raised by the following Government agencies:

- Narrabri Shire Council (Narrabri);
- NSW Department of Primary Industries – Mineral Resources;
- NSW Department of Primary Industries – Forestry NSW;
- NSW Department of Primary Industries – Agriculture;
- NSW Department of Primary Industries – Fisheries NSW;
- NSW Department of Water and Energy;
- NSW Department of Environment and Climate Change – Environment Protection Authority; and

The Environmental Assessment has been formulated around the specific DGr’s with further cross referencing with the formal written responses provided by the government agencies listed above. The requirement to undertake further, exclusive consultation with DECC, DWE and DPI was considered as unnecessary given the extent of formal consultation and discussion carried out to date in the period prior to the declaration of the project’s Major Project status and the information available on the particular requirements of each respondent.

Notwithstanding the above, some specific consultation has occurred during the preparation of the document that addresses this requirement. Specifically the following discussions were held.

- Presentations to the Department of Energy, Utilities and Sustainability Executive (DEUS, now Water and Energy) in August 2006 regarding the Project
- Discussions with Denis Milling of the Department of Water and Energy in early November 2007 and the receipt of an application under part 3A of the River and Foreshores Improvement 1948 (since repealed);
- Discussion with Simon Smith (DECC Armidale) during field based meetings in Narrabri (offsets/bio-banking meeting, March 2007) and the subsequent provision of various guideline documents (23/07/07) pertaining to Aboriginal heritage assessments for the Environmental Assessment;
- Correspondence between Eastern Star and DPI (Head Office) and then subsequently with the Deputy Director-General - Mineral Resources regarding the applicability of the Pipelines Act 1967 and Gas Supply Act 1996 to the Project.
The Proponent has consulted extensively with Forestry NSW regarding the Project including specific discussion of the proposed location of the gas flow line and the assessment of commercial forestry products located upon the area likely to impacted by the Project.

Further consultation with the following Government and Non-Government agencies has occurred during the *Environmental Assessment* process.

- Pilliga Forest Aboriginal Management Committee;
- Narrabri Local Aboriginal Land Council;
- Roads and Traffic Authority; and
- The Civil Aviation Safety Authority.

The DGRs identify key assessment requirements which are required to be addressed in the *Environmental Assessment* together with a description of what measures will be implemented to avoid, minimise, mitigate, offset, manage and/or monitor these impacts. The key issues raised in the DGRs were as follows.

- Strategic Justification (all Project components).
- Greenhouse Gas Impacts (power station component).
- Air Quality (power station, gas infrastructure components).
- Noise Impacts (all Project components).
- Ecological Impacts (gas infrastructure components).
- Heritage Impacts (gas infrastructure components).
- Hazards and Risk Impacts (all Project components).
- Environmental Risk Analysis (all Project components).

Appendix 2 presents a summary of the formal DGRs and the individual issues that were provided in the correspondence from the government agencies and where each relevant issue is addressed in the *Environmental Assessment*.

### 4.2.2.4 Social Impact Assessment Consultation

No specific social impact assessment has been carried out for this project due to its relative size and expected positive benefits to the social and economic health of the Narrabri and surrounding area. However, in the absence of a programmed socio-economic assessment of the Project, the Joint Venture has at various times discussed the Project with key members of the Narrabri Shire Council including the current Mayor Mr George Sevill, former General Manager Ian McCallum, current General Manager Max Kershaw and Narrabri Shire Council Economic Development Manager Bill Birch.
The economic benefit that the exploration and development activity has brought to the Narrabri region has been significant in a range of industry sectors. A majority of the basic services utilised in the project to date are sourced locally including civil/earthworks contracting, fencing, electrical and irrigation contracting. The recent development of the Bibblewindi Water Management Facility at the CSG pilot was carried out by a local engineering contractor whose earthworks, engineering and labour in the construction totalled approximately $800,000.

A majority of the site preparation, earthworks and field services employed during this major project will be sourced from local suppliers furthermore benefiting the local economy through direct and indirect means.

4.2.3 Review of Planning Issues, Environmental Guidelines and Relevant Legislation

4.2.3.1 Introduction

A number of State and local planning instruments apply to the Project. These planning instruments were reviewed to identify any environmental aspects requiring consideration in the Environmental Assessment. In addition, the DGRs identified a number of guideline documents to be referenced/reviewed during the preparation of the Environmental Assessment (see Table A2-1 in Appendix 2).

A brief summary of each relevant planning instrument is provided in Sections 4.2.3.2 to 4.2.3.4. Section 4.2.3.5 briefly outlines the approach taken to referencing and reviewing environmental guideline documents.

The application and relevance of planning instruments related to specific environmental issues have been assessed in the relevant specialist consultant assessments.

It is noted that Part 3A of the Environmental Planning and Assessment Act 1979 does not require projects considered under that section of the Act to satisfy the provisions of local planning instruments other than it is a pre-requisite that the activities/project components for which project approval is being sought are permissible uses under the relevant local environmental plan.

4.2.3.2 State Planning Issues

Major Projects State Environmental Planning Policy

The Project was assessed by the Director-General of the Department of Planning under delegation from the Minister for Planning, as meeting the requirements of clause 24 of schedule 1 of the NSW State Environmental Planning Policy (Major Projects) 2005 such that:
Clause 24 “Development for the purpose of an electricity generation facility that:
(a) has a capital investment value of more than $30 million for gas or coal-fired
generation…”

The proposed Major Project, incorporating the gas gathering system, gas flow line and
electricity generation facilities will require estimated capital investment of approximately
$46m, thereby exceeding the minimum capital investment value of $30 million as prescribed in
the aforementioned Schedule 1 of the State Environmental Planning Policy (Major Projects)
2005 for electricity generation facilities.

The proposed development having been assessed as subject to the Major Projects SEPP has
accordingly been declared a Project to which Part 3A of the Environmental Planning and
Assessment Act 1979 applies for the purpose of section 75B of that Act.

State Environmental Planning Policy No. 33 (SEPP 33) – Hazardous and Offensive
Development

Hazardous and offensive industries, and potentially hazardous and offensive industries, relate to
industries that without the implementation of appropriate impact minimisation measures will, or
potentially will, pose a significant risk in relation to the locality, to human health, life or
property, or to the biophysical environment.

The proposed development has been assessed in accordance with the (SEPP33 guideline) as not
potentially hazardous or offensive. The hazardous substances and dangerous goods to be used
or stored within the Project Site do not meet the stated volumetric thresholds calculated during
the SEPP33 screening process. The operation of the gas flow line and expanded power station is
not considered offensive or potentially offensive development such that risks identified have
been mitigated to such a degree as to render the application of SEPP 33 unnecessary.

The SEPP 33 screening document was prepared by the Proponent’s internal OH&S manager
and is reproduced as Appendix 3.

State Environmental Planning Policy No. 44 (SEPP 44) – Koala Habitat Protection

The Narrabri Local Government Area (LGA) is identified in Schedule 1 of this policy as an
area that could provide habitat for Koalas. The policy requires an investigation be carried out to
determine if core or potential Koala habitat is present on the areas of the Project Site likely to
be disturbed. Core Koala habitat comprises land with a resident population of Koalas whereas
potential Koala habitat comprises land with native vegetation with known Koala feed trees
constituting at least 15% of the total number of trees present on a site.

SEPP 44 has been addressed by the ecological consultants to the Project (Idyll Spaces (2008)
4.2.3.3 Regional Planning Issues

Orana Regional Environmental Plan (REP) No 1 – Siding Spring

The Project Site lies within a region, called the Siding Spring Observatory Dark Skies Region, declared by the (then) Minister for Infrastructure and Planning to better protect the observing conditions at the Siding Spring Observatory. The region includes all local government areas falling within 200km of the observatory. Under Section 8 of the REP, consultation and/or concurrence is only required for locations within 100km of the observatory. The Project site lies in excess of 100km from the observatory and as such, this REP has not been considered further.

Additionally, negligible lighting is proposed within the Project Site. The lighting installed at the Wilga Park Power Station will be designed / positioned to minimise visual intrusion to the surrounding landholders and as such, will not significantly impact on the Siding Spring Observatory given the considerable separation distance.

4.2.3.4 Environmental Guidelines

The DGRs require that in assessing the identified key assessment requirements, reference be made to one or more guideline documents. In addition, a number of the government agencies consulted in relation to the Project required reference to other environment guideline documents. Each of these guidelines was obtained, reviewed and where appropriate forwarded to the relevant specialist consultant for incorporation into the specialist environmental studies.

4.2.3.5 Legislation Relevant to the Environmental Assessment

Commonwealth Planning Legislation

Eastern Star Gas has (on behalf of the Joint Venture) has completed investigations that have assisted in determining the applicability of specific section of the (Cwth) Environment Protection and Biodiversity Conservation Act 1999, particularly Part 3 (S18.ss 2-6) which prohibits actions likely to result in significant impact on listed threatened species or endangered communities of national significance.

The completion of comprehensive flora and fauna studies across the Project Site indicate that the proposed activity will not trigger an assessment under the EPBC Act. A review of these findings can be found in the reports by Idyll Spaces (2008) and Kendall and Kendall (2007).

State Planning Legislation

A range of State planning legislative and regulatory instruments applies to the proposed gas utilisation Project. A full review of the legislation was completed to identify any pertinent aspects not considered in the preliminary assessment documents. The receipt of the DGRs completed the planning review process, verified the assessment carried out to date and further clarified the range of guidelines and standards that provide benchmarks for the completion of the environmental assessment.
Other State Legislation

Forestry Act 1916

The southern section of the proposed development, incorporating the GGS, inlet and compression facility and approximately 14km of gas flow line is located entirely upon lands designated Crown Lands State Forests under the Forestry Act 1916. An occupation permit may be granted by Forests NSW under section 31 of the Forestry Act 1916 in the following terms:

31 Permits to occupy land
   (1A) An occupation permit under this Act authorises the holder, subject to the regulations and subject to the conditions and limitations of the permit, to occupy land:
       (c) where the permit is in respect of land within a State forest or flora reserve, for any purpose approved by the commission and specified in the permit.

Advice from Forestry NSW has been sought in terms of formalising an agreement for an occupation permit as described in section 31 of the Forestry Act 1916. This permit has been obtained for the Project and the ongoing operation of the CSG pilots within the Pilliga East and Bibblewindi State Forests.

Water Management Act 2000

The proposed flow line route is required to cross Bohena Creek (see Section 3.4.3 and Figure 3.10), which is subject to the provisions of the Water Management Act 2000. The proposed development requires the excavation of the sand creek bed for the placement of the flow line infrastructure. This activity will require the granting of a Controlled Action Approval by the Department of Water and Energy.

Native Vegetation Act 2003

The modification or removal of native vegetation and/or remnants in lands not excluded from the Native Vegetation Act 2003 may be subject to the provisions of the act, specifically S12 and 13, and require the consent of the Minster.

The sections of the gas flow line corridor that are the subject of the act are limited to the freehold agricultural lands. Preliminary route assessment and field surveying indicates that no native vegetation remnants as described in the act will be impacted by the Project.

4.2.4 Summary of Environmental Issue Identification

The environmental issues and potential impacts associated with the Project have been characterised through various internal and external consultative processes. Commencing with the submission of the preliminary assessment report, the Proponent has continued to build upon historical consultation with landholders, the local and regional communities, local governments and Government agencies through an extended phase of project development. Culminating in the receipt of the DGRs, the Proponent is confident that the Environmental Assessment will adequately characterise the potential and likely impacts of the proposal and furthermore mitigate the residual risks associated with the implementation and operation of the proposal.
The issues identified in the DGRs and through the consultative process have been identified as potential sources of environmental risk. In accordance with the *Australian Standard 4360: 2006* and *Environmental Risk Management HB203: 2006*, the risks associated with the proposal are discussed and considered in terms of potential consequences and mitigated where an unacceptable residual risk remains.

### 4.3 Risk Identification and Analysis

Risk is the chance of something (an event/circumstance) happening that will have an impact (negative/positive) on objectives (AS/NZS, 2004). The analysis of risk, understanding the nature of risk and deducing the extent to which risk impacts on the objectives of the organisation and ultimately how best to modify (treat) the risk to acceptable levels is the aim of risk management.

In its most basic form, risk is a function of consequence and likelihood that both carry varying scales of severity. The proposed activity poses a direct risk to the environment in that its implementation will result in a quantifiable change to the existing environment within the Project Site. In general terms, the installation of the gas flow line linking the CSG pilot with the Wilga Park Power Station will require the modification of a finite area of existing vegetation/habitat, the disturbance of the topsoil across the maximum 10m wide easement/work area, the disturbance of subsoils in the excavation of the flow line trench and the final rehabilitation of the disturbed area. The expansion of the Wilga Park Power Station requires the modification of a disturbed agricultural zone and the importation of construction materials to permit the installation of additional generating capacity.

These proposed actions carry a direct risk to the environment that can be analysed in terms of likelihood and consequences and accordingly treated (mitigated) so as to minimise the impact of the proposed activity during the short (implementation) and long (operational) term.

*Table 4.1* outlines in brief the Project-related activities that carry an environmental risk that has undergone risk analysis.

The allocation of a consequence rating was based on the definitions contained in *Table 4.2*. It is noted that the assigned consequence rating represents the highest level applicable, i.e. if a potential impact is assigned a level of 4 - Major based on impact to the environment and 2 - Minor based on area of impact, the consequence level assigned will be 4 - Major.

The likelihood or probability of each impact occurring was then rated according to the definitions contained in *Table 4.3*. 
The risk associated with each environmental impact was assessed without the inclusion of any operational controls or safeguards in place and based on the qualitative assessment of consequence and likelihood, a risk ranking of either; low, medium, high or extreme was assigned to each potential impact based on the matrix of Table 4.4.

For each environmental issue identified in Table 4.1, the potential environmental impacts (see Table 4.5) have been allocated a risk rating based on the potential consequences and likelihood of occurrence.

### Table 4.1
Summary of Identified Environmental Issues

<table>
<thead>
<tr>
<th>Action</th>
<th>Consequences</th>
<th>Receptor</th>
<th>Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation of the gas flow line</td>
<td>Modification or destruction of vegetation.</td>
<td>Threatened flora and fauna or species of aboriginal cultural significance within Project Site.</td>
<td>Reduced biodiversity, direct adverse effects on threatened species, destruction of culturally significant species.</td>
</tr>
<tr>
<td></td>
<td>Alteration of soil structure, stability and biological efficacy.</td>
<td>Soils within Project Site/flow line easement.</td>
<td>Loss of soil stability and quality and elevated erosion potential post rehabilitation.</td>
</tr>
<tr>
<td></td>
<td>Removal, destruction or modification of places and artefacts of Aboriginal heritage significance.</td>
<td>Local and regional Aboriginal community.</td>
<td>Identified and unidentified places and artefacts of Aboriginal heritage significance.</td>
</tr>
<tr>
<td></td>
<td>Dust generation, Decreased air quality from vehicular movements, greenhouse gas emissions.</td>
<td>Localised environment surrounding Project Site, surrounding vegetation.</td>
<td>Nuisance from fugitive dusts.</td>
</tr>
<tr>
<td></td>
<td>Noise generated during construction period.</td>
<td>Localised environment and residences.</td>
<td>Nuisance noise levels and disturbance during construction.</td>
</tr>
<tr>
<td></td>
<td>Alteration of natural Ground or surface water regimes</td>
<td>Localised and downstream environment</td>
<td>Alteration of natural flows within ground and surface water systems</td>
</tr>
<tr>
<td>Operation of Power Station</td>
<td>Greenhouse Gas Impacts.</td>
<td>Local and regional environment, global greenhouse gas inventory.</td>
<td>Increased CO₂ emissions or damage to greenhouse environment from venting of methane to atmosphere.</td>
</tr>
<tr>
<td></td>
<td>Noise Impacts.</td>
<td>Surrounding landholder and local environment.</td>
<td>Increased background noise levels.</td>
</tr>
</tbody>
</table>
### Table 4.2
#### Qualitative Consequence Rating

<table>
<thead>
<tr>
<th>Level</th>
<th>Descriptor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Catastrophic</td>
<td>• Massive and permanent detrimental impacts on the environment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Very large area of impact.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Massive remediation costs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Reportable to government agencies.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Large fines and prosecution resulting in potential closure of operation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Severe injuries or death.</td>
</tr>
<tr>
<td>4</td>
<td>Major</td>
<td>• Extensive and/or permanent detrimental impacts on the environment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Large area of impact.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Very large remediation costs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Reportable to government agencies.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Possible prosecution and fine.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Serious injuries requiring medical treatment.</td>
</tr>
<tr>
<td>3</td>
<td>Moderate</td>
<td>• Substantial temporary or minor long term detrimental impact to the environment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Moderately large area of impact.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Moderate remediation costs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Reportable to government agencies.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Further action may be requested by government agency.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Injuries requiring medical treatment.</td>
</tr>
<tr>
<td>2</td>
<td>Minor</td>
<td>• Minor detrimental impact on the environment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Affects a small area.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Minimal remediation costs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Reportable to internal management only.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No operational constraints posed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Minor injuries which will require basic first aid treatment.</td>
</tr>
<tr>
<td>1</td>
<td>Insignificant</td>
<td>• Negligible and temporary detrimental impact on the environment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Affects an isolated area.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No remediation costs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Reportable to internal management only.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No operational constraints posed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No injuries or health impacts.</td>
</tr>
</tbody>
</table>

Source: modified after HB 203:2006 - Table 4(B)

### Table 4.3
#### Qualitative Likelihood Rating

<table>
<thead>
<tr>
<th>Level</th>
<th>Descriptor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Almost Certain</td>
<td>Is expected to occur in most circumstances.</td>
</tr>
<tr>
<td>B</td>
<td>Likely</td>
<td>Will probably occur in most circumstances.</td>
</tr>
<tr>
<td>C</td>
<td>Possible</td>
<td>Could occur.</td>
</tr>
<tr>
<td>D</td>
<td>Unlikely</td>
<td>Could occur but not expected.</td>
</tr>
<tr>
<td>E</td>
<td>Rare</td>
<td>Occurs only in exceptional circumstances.</td>
</tr>
</tbody>
</table>

Source: HB 203:2006 - Table 4(A)
### Table 4.4
**Risk Rating**

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>Consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Insignificant</td>
</tr>
<tr>
<td>A (Almost Certain)</td>
<td>H</td>
</tr>
<tr>
<td>B (Likely)</td>
<td>M</td>
</tr>
<tr>
<td>C (Possible)</td>
<td>L</td>
</tr>
<tr>
<td>D (Unlikely)</td>
<td>L</td>
</tr>
<tr>
<td>E (Rare)</td>
<td>L</td>
</tr>
</tbody>
</table>

Note: Rating modified after HB 203:2006 - Table 4(C)

### Table 4.5
**Analysis of Risk**

<table>
<thead>
<tr>
<th>Potential Environmental Impacts</th>
<th>Discussion</th>
<th>Consequence</th>
<th>Likelihood</th>
<th>Unmitigated Risk Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Threatened Flora and Fauna</strong></td>
<td>3</td>
<td>B</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Modification or destruction of vegetation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct adverse impacts on threatened species</td>
<td>3</td>
<td>C</td>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td>Reduced biodiversity</td>
<td>3</td>
<td>C</td>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td><strong>Soils and Land Capability</strong></td>
<td>3</td>
<td>B</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Alteration of soil structure, stability and biological efficacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decreased land and agricultural capability of project site</td>
<td>3</td>
<td>C</td>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td><strong>Aboriginal Heritage</strong></td>
<td>4</td>
<td>D</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Removal, destruction or modification of places &amp; artefacts of Aboriginal heritage significance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Greenhouse Gas and Air Quality Impacts</strong></td>
<td>3</td>
<td>A</td>
<td>Extreme</td>
<td></td>
</tr>
<tr>
<td>Greenhouse Gas Impacts</td>
<td>High</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dust generation, Decreased air quality from vehicular movements, greenhouse gas emissions</td>
<td>2</td>
<td>C</td>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td>Decreases in localised air quality</td>
<td>2</td>
<td>A</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td><strong>Ground and Surface Water Impacts</strong></td>
<td>2</td>
<td>C</td>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td>Alteration of natural ground and surface water regimes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Construction and Operation Noise Impacts</strong></td>
<td>2</td>
<td>C</td>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td>Construction noise exceeding noise criteria</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operational noise exceeding noise criteria</td>
<td>3</td>
<td>D</td>
<td>Moderate</td>
<td></td>
</tr>
</tbody>
</table>

Consequence: 1 = Insignificant; 2 = Minor; 3 = Moderate; 4 = Major
Likelihood: A = Certain; B = Likely; C = Possible; D = Unlikely
The four risk rankings are defined as follows.

Low (L): requiring a basic assessment of proposed controls and residual impacts. Any residual impacts are unlikely to have any major impact on the local environment or stakeholders.

Moderate (M): requiring a medium level assessment of proposed controls and residual impacts. It is unlikely to preclude the development of the Project but may result in impacts deemed unacceptable to some local or government stakeholders.

High (H): requiring in-depth assessment and high level documentation of the proposed controls and mitigation measures. Ultimately, this level of risk may preclude the development of the Project.

Extreme (E): requiring in-depth assessment and high level documentation of the proposed controls and mitigation measures and possible preparation of a specialised management plan. Unless considered to be adequately managed by the controls and/or management plan, this level of risk is likely to preclude the development of the Project.

Table 4.5 provides an assessment of the unmitigated risk for each potential environmental impact. Where appropriate, and to provide a more realistic assessment of the risks posed by the various environmental issues, the environmental impacts have been further defined using either a level, range or scale of impact providing for the various circumstances which may apply. Table 7.1 in Section 7 provides an analysis of risk following the implementation of operational and safeguards measures.

4.3.1 Environmental Issue Prioritisation

The issues identified as requiring assessment within the Environmental Assessment have been prioritised based, in decreasing order, of emphasis upon the following.

- The key assessment requirements of the DGRs (see Section 4.2.2.3 and Appendix 2).
- Issues identified with a greater frequency of impacts with high or extreme risk ratings (see Table 4.5).
- Issues with a high frequency of identification (see Table 4.1).

The Proponent recognises that due to the breadth of the consultation for the Project, some community representatives are likely to have been consulted on more than one occasion or as part of more than one stakeholder group. Similarly, the various government agencies consulted invariably duplicated many issues requiring assessment. As a consequence, the frequency of identification for some issues may be slightly elevated. Notwithstanding this duplication, and considering the comprehensive nature of the consultation program, the potentially elevated frequency of identification for some issues, is not assessed as unduly influencing the prioritisation of issues given those issues likely to be repeated will generally be noted by many stakeholders and are therefore likely to be highly identified in any event.
Based on the issues identified and the risk ratings allocated to the potential environmental impacts of these, the following order of priority has been determined. This order of priority provides for the order of assessment in Section 5, namely:

1. Air Quality and Greenhouse Gases
2. Flora
3. Fauna
4. Soils and Agricultural Capability
5. Aboriginal Heritage
6. Ground/Surface Water
7. Noise
8. Traffic Management
9. Visual Amenity
10. European Heritage

The sources of risk and potential environmental impacts associated with each issue are discussed within relevant subsections within Section 5. All other issues generally allocated a “moderate” or “low” level of priority, have been addressed to the level considered appropriate throughout the Environmental Assessment.