Section 7
Project Evaluation and Justification

Preamble

This section concludes the assessment of the proposed Narrabri Coal Seam Gas Utilisation Project. The key assessment requirements (identified within the Director -General's requirements) and issues identified as having higher unmitigated risk rankings are reassessed given the proposed safeguards and mitigation measures being proposed at which point the level of residual risk can be determined. Consideration of the Project in terms of the principles of ecologically sustainable development, the Projects perceived economic and social benefits and the consequences locally, regionally and nationally of the Project not going ahead are then assessed.

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7.1 Introduction

The environmental assessment for the Project has been undertaken through the characterisation and consideration of risks posed to the environment by the Project, the further assessment of potential mitigative action to reduce this calculated risk and the formulation of a range of safeguards and controls that achieve acceptable outcomes for the localised and surrounding environment.

In this section, the Project and its residual risks are also assessed against the principles of Ecological Sustainable Development (ESD) in order to provide an indicative representation of the overall acceptability of the project.

7.1.1 Residual Environmental Risk

The following re-assessment of the risks discussed in Section 4.3 occurs in light of proposed operational safeguards, controls and mitigative action to reduce the assessed environmental risks to acceptable levels.

Potential Environmental Impacts	Unmitigated Risk	Consequence	Likelihood	Residual Risk Rating
Threatened Flora and Fauna				
Modification or destruction of vegetation	Moderate	3	B	Moderate
Direct adverse impacts on threatened species	Moderate	3	C	Low
Reduced biodiversity	Moderate	3	C	Low
Soils and Land Capability				
Alteration of soil structure, stability and biological efficacy	Moderate	3	B	Low
Decreased land and agricultural capability of project site	Moderate	3	C	Low
Aboriginal Heritage				
Removal, destruction or modification of places & artefacts of Aboriginal heritage significance	Moderate	4	D	Low
Greenhouse Gas and Air Quality Impacts				
Greenhouse Gas Impacts	High	3	A	Moderate
Dust generation, Decreased air quality from vehicular movements, greenhouse gas emissions	Moderate	2	C	Low
Decreases in localised air quality	Moderate	2	A	Low
Ground and Surface Water Impacts				
Alteration of natural ground and surface water regimes	Moderate	2	C	Low
Construction and Operation Noise Impacts				
Construction noise exceeding noise criteria	Moderate	2	C	Low
Operational noise exceeding noise criteria	Moderate	3	D	Low
Consequence: 1 = Insignificant; 2 = Minor; 3 = Moderate; 4 = Major Likelihood: A = Certain; B = Likely; C = Possible; D = Unlikely				

Through the formulation of the proposed safeguards, controls and mitigation measures, the risk ratings of a majority of potential impacts outlined in Section 4.3 have been effectively reduced to a low risk rating and have assessed a generally acceptable in light of the proposed management plans.

Further consideration of the residual risks of potential impacts moderate or higher includes the following.

- Modification or destruction of vegetation

  The modification of or destruction of vegetation within the Project Site is a necessary requirement to facilitate the installation of the GGS and gas flow line. As discussed in Section 5.4.6, the calculated impact on native vegetation in this region is considered relatively low as the communities in question are locally common and regionally widespread. Suitable options are available to the Project that will offset the calculated impacts on native vegetation

- Greenhouse Gas Impacts

  The utilisation of CSG produced from the Bibblewindi and Bohena CSG pilots represents a sustainable and environmentally friendly option when compared to the alternatives considered. However, it has retained a moderate residual risk rating given the desirability of net greenhouse gas emission reductions. A comparison of the proposed utilisation strategy with the atmospheric venting option demonstrates that the equivalent greenhouse gas emissions in tonnes of CO_2 equivalent would be in the order of 7.2 times greater emissions if the Project was not to go ahead.

7.1.2 Ecologically Sustainable Development

The principles of Ecologically Sustainable Development (ESD) recognise the importance of development that meets the needs of the present generations without compromising the ability of future generations to meet their own needs. The primary concepts that underpin ESD include the precautionary principle, intergenerational equity, conservation of biodiversity and ecological integrity and improved valuation, pricing and incentive mechanisms. These concepts are designed to place greater importance on the biophysical and socio-economic environment and how a development is likely to modify the local and regional environment in both positive and negative terms.

Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* and Section 2 of the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries)* make specific mention of resource development and impact assessment in terms of these ESD principles and as such, the proposed development has duly considered these principles throughout all stages of planning.

7.1.2.1 The Precautionary Principle

In order to satisfy the precautionary principle of ESD, emphasis must be placed on the anticipation and prevention of environmental damage, rather than a reaction to it. During the planning phase for the project and throughout the preparation of the *Environmental Assessment*, the Proponent engaged specialist consultants to examine the existing environment, predict possible impacts and recommend controls, safeguards and/or mitigation measures in order to ensure that the level of impact satisfies statutory requirements or reasonable community expectations.

Throughout the development of the Project, the Proponent and its consultants have adopted an the precautionary approach to the potential, likely and actual environmental impacts particularly in regard to the ecological damage, by undertaking an analysis of the risks posed by the Project and carrying out appropriate baseline investigations and environmental evaluation. The controls, safeguards and/or mitigation measures have therefore been planned with a comprehensive knowledge of the existing environment and the potential risk of environmental degradation posed by Project activities.

The implementation of the environmental safeguards, controls and mitigation measures has been formalised by the Proponent as the draft Statement of Commitments presented as Section 6.

The Project has been designed with the principal objective being to utilise the natural gas produced during extend testing of the CSG pilots in PAL2 whilst developing natural gas resources in PEL238 in a safe and environmentally responsible manner. The Proponent recognises that this approach can assist in the minimisation of unnecessary harm to the local and regional environment.

The precautionary principle has been considered during all stages of the design and assessment of the Narrabri Coal Seam Gas Utilisation Project. The approach as adopted, i.e. risk analysis, initial assessment, consultation, specialist investigations and safeguard design, provides a high degree of certainty that the Project would not result in any major unforeseen impacts.

7.1.2.2 Intergenerational Equality

The concept of intergenerational equality incorporates the understanding that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the future generations.

These elements are addressed throughout the design of the Project itself, the formulation of operational safeguards to reduce environmental risk and with the objectives of rehabilitation in mind. The Narrabri Coal Seam Gas Utilisation Project would contribute significantly to the economic activity of the Narrabri region through the generation of indirect and direct employment and increased demand for local goods and services. As such, the benefits of the project would be distributed throughout the local community.

The Project was also designed such that elements of the existing environment available to this generation, including agricultural land, water and local biodiversity would continue to be available to future generations.

7.1.2.3 Conservation of Biodiversity and Ecological Integrity

The implementation of the Project with due consideration of local and regional biodiversity and the protection of natural ecological processes is of paramount concern. The Pilliga Forests represent an important natural feature of regional, State and National significance in terms of biodiversity and habitat.

The fundamental consideration of biological diversity and ecological integrity throughout the development of the Project is represented through the minimisation of impacts on the flora and fauna of the Project Site whilst allowing the ongoing development and assessment of a resource of State and National significance.

The location of the flow line route is designed to reduce the overall cumulative impact on native vegetation to the smallest degree.

The weeds management plan is designed to further mitigate the potential risks associated with a development of this type in a natural environment.

7.1.2.4 Improved Valuation and Pricing of Natural Resources

The issues that form the basis of this principle are that all natural resources are valued appropriately, including natural gas in the forms produced from the Narrabri Coal Seam Gas Project

The Proponent's principal objective is to utilise a valuable resource, which would otherwise be wasted, in an environmentally responsible manner. Given the importance to the State of securing energy supplies in light of the continued growth of domestic and industrial markets, the Proponent is confident that the Project design demonstrates that an appropriate value has been placed on the natural resources in question and to those elements of the existing environment likely to be impacted by the Project.

The extent of research, planning and design of environmental safeguards, mitigation measures and offset strategies to prevent irreversible damage to environmental resources, other than the CSG being produced is evidence of the value placed by the Proponent on these resources.

The value placed by the Proponent on natural resources is evident in the identification of Project objectives, extent of site-specific research, planning and environmental safeguards and measures to be implemented to prevent permanent environment impacts being realised.

The economic rationalisation behind the Project indicates that the utilisation of the CSG resources in the proposed manner will assist in the ongoing development of the gas exploration, development and production activities across PEL238 whilst increasing the operation and hence profitability of the existing Wilga Park Power Station. The net environmental benefits realised by the successful implementation of the project compliment the Proponent's commitments to developing the regions natural resources with due consideration of the operating environment and within the terms of all approvals, leases and licences awarded to it.

7.2 Justification of the Project

This Environmental Assessment has identified and assessed the relevant environmental impacts associated with the proposed implementation and operation of the Narrabri Gas Utilisation Project. The Proponent remains confident that the Project will not create any long term, detrimental environmental impacts likely to alter the localised or regional environment and that measurable environmental and socio-economic benefit will be realised throughout its operational life.

In preparing this review, the Proponent has conducted an extensive range of environmental surveys to accurately characterise the existing environment and the potential and likely impacts of the Project. In consultation with a number of stakeholders, the Proponent has made significant efforts to reduce the cumulative impact of all Project design components through a comprehensive range of safeguards, controls and mitigation measures.

7.2.1 Biophysical Considerations

7.2.1.1 Greenhouse Gas and Air Quality Impacts

The net benefit the Project presents to a measurable reduction in greenhouse gas impacts has been described. The utilisation of CSG produced from the Bibblewindi and Bohena CSG Pilots represents an environmentally responsible method of consumption in light of the relative impact of atmospheric venting of this resource. Air pollutant levels are predicted to remain below DECC criteria for fugitive dust emissions and stated SO_2 and NO_2 emission limits. The emission of CO_2 from the combustion of CSG at the Wilga Park Power Station will result in a minor increase in the current State and National emission inventory.

7.2.1.2 Flora and Fauna

Modification and alteration of native vegetation and habitat for faunal species has been reduced to the smallest extent possible in light of the project design components and rehabilitation objectives. No threatened species have been identified as likely to be impacted by the Project.

The Project as described will require the modification of a maximum 13.1 ha of native vegetation. In terms of the current cumulative impacts of the CSG exploration activities in PEL238, the Proponent currently maintains ≈25ha of active exploration assets within a total of 26500 ha under the PAL2 title. At the completion of the Project, the total area of operational assets will total approximately 40ha which represents less than 0.15% of PAL2.

7.2.1.3 Soils and Land Capability

The impact on the Project Site's soils and land capability have been adequately described and mitigated to acceptable levels. Any losses in these terms would be temporary and manageable given the safeguards employed to protect its inherent value to the rehabilitation process.

7.2.1.4 Aboriginal Heritage

The Project will not impact on any known places or items of Aboriginal heritage significance within the Project Site. The Proponent has outlined an extensive range of safeguards, controls and mitigation measures that reduce the risk of impact on previously undiscovered places and items of significance.

7.2.1.5 Noise Impacts

Whilst the Project will generate industrial noise in excess of current background levels, these levels will remain within stated DECC criteria for all construction and operational activities.

7.2.1.6 Traffic

Traffic levels along the Newell Highway would not increase significantly. Localised traffic increases on forestry and Shire roads for the duration of the construction phase are likely, however, they are not expected to result in any significant issues with the safe and efficient flow of traffic in and around the Project Site. Adequate traffic management planning will ensure that no public road is closed at any time during the construction phase of the Project.

7.2.1.7 Visual Amenity

The Project would result in a short to medium term (3-5 year) alteration of the visual amenity along the southern section of the flow line corridor where clearing will be undertaken in both the Bibblewindi and Pilliga East State Forest. The visual impact of the Project on the cleared agricultural lands is consistent with the land use type and does not represent a significant departure from the ongoing operation of cropping and grazing enterprises across this environment.

7.2.1.8 European Heritage

The Project will not impact on any known places or items of European heritage significance within the Project Site. The Proponent has outlined an extensive range of safeguards, controls and mitigation measures that reduce the risk of impact on previously undiscovered places and items of significance.

7.2.1.9 Potential Land Use Conflicts

The Proponent has negotiated with each of the land owners along the proposed gas flow line corridor and in all cases, except one, has reached a satisfactory agreement to avoid any unacceptable impacts upon the land uses of the land within and adjoining the corridor. The only case where agreement has not been amicably reached is currently before the Warden's Court.

7.2.1.10 Socio-economic Considerations

The impact of the Project on the local and regional socio-economic environment has been determined as positive, with measurable increases in direct and indirect employment opportunities and the utilisation of the region's extensive network of retail and industrial service providers.

The Project, as an integral part of the Joint Venture's objectives for development of CSG resources in PEL238, would also have significant economic benefits to NSW through the generation of royalty revenue and the establishment of additional, gas fired electricity generation capacity.

7.3 Conclusions

The Narrabri Coal Seam Gas Utilisation Project presents a feasible option for the consumption of gas produced from within PAL2. The Project has been designed to address the key issues raised by all levels of Government, landholders affected by the Project and the wider community.

The Project provides a pathway for the consumption of CSG produced during the extended testing of CSG wells in preference to the venting of gases to atmosphere. In addition to the environmental benefits offered by the Project, the construction and operation of the project would result in a significant economic boost to the Narrabri Region.

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