NSW GOVERNMENT
Department of Planning

MAJOR PROJECT ASSESSMENT
Narrabri Gas Utilisation Project
(Wilga Park Power Station)

Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

November 2008

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EXECUTIVE SUMMARY

Eastern Star Gas Limited (the Proponent) currently operates a gas-fired power station at Wilga Park, south-west of Narrabri, using natural gas sourced from the nearby Coonarah Gas Field. Development consent was issued by Narrabri Shire Council in November 2002 for a 12 megawatt (MW) power station, however, it was only ever constructed to 11 MW and since it commenced operations in 2004, has run intermittently at only 3 MW capacity due to declining gas supplies.

The Proponent seeks approval to expand Wilga Park Power Station to 40 MW and use coal methane gas that is currently generated from the company's Bibblewindi and the Bohena Coal Seam Gas pilot projects. The expanded power station is proposed to operate 24 hours per day and 365 days per year as a base load electricity generator providing constant electricity supply to the network. The proposal also includes the construction of a gas gathering system and gas compression facilities at each pilot and a 32 kilometre buried gas flow line linking the pilot wells to the power station.

The Department received two public submissions regarding the project. Of these one objected to the proposal and one did not specifically state a position. Five submissions were received from public authorities: NSW Department of Environment and Climate Change, NSW Rural Fire Service; Narrabri Shire Council; NSW Department of Primary Industries and NSW Department of Lands. None of the agencies objected to the proposal, however, they raised issues for the Department's consideration.

The potential for environmental impacts resulting from the project relate to the expanded power station and disturbance corridor for the gas flow pipeline and gas gathering lines.

The Department assessed the Proponent's Environmental Assessment, Submissions Report, Preferred Project Report, Statement of Commitments and supplementary information, together with the submissions received by public agencies and the community on the project. Based on its assessment, the Department is satisfied that the Proponent has provided a robust and conservative assessment of impacts and that the impacts associated with the project can be managed and mitigated to achieve acceptable environmental standards.

Although some noise impacts may result, particularly to the future development of the site to the north of the power station, the Department considers the project to be on balance justified given its benefits to the broader community and because opportunity exists to minimise impacts to future land use through appropriate noise mitigation measures.

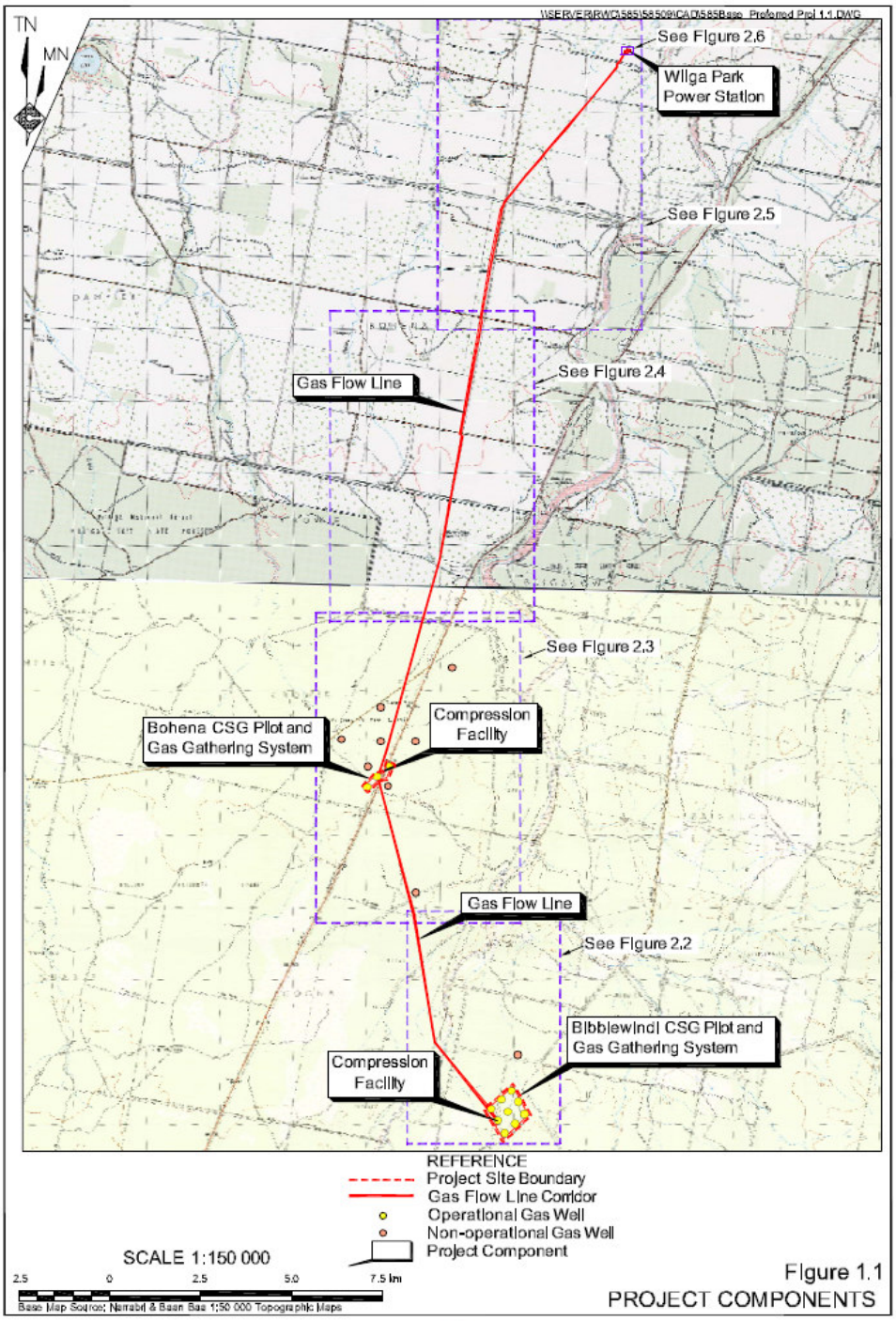
On balance, the Department considers the project to be justified and in the public's interest and should be approved subject to the Department's recommended conditions of approval and the Proponent's Statement of Commitments.

TABLE OF CONTENTS

1. BACKGROUND

Eastern Star Gas Limited (the Proponent) currently operates the gas-fired Wilga Park Power Station near Narrabri. The power station has approval to run at 12 megawatts (MW) using gas sourced from the company's Coonarah Gas field to the west of the power station site. Since it began operation, the gas supply has been significantly downgraded and the power station currently operates at only 3 MW part capacity. The Proponent seeks approval to expand the Wilga Park Power Station to 40 MW and to source coal methane gas currently being generated by testing wells at the company's Bibblewindi and Bohena Coal Seam Gas pilot projects south of the power station site. The project also includes the construction of a gas gathering system and gas compression facilities at each pilot and a 32 kilometre buried gas flow line connecting the pilot wells to the power station. The different project components are represented in Figure 1.

Figure 1 – Project Components (reproduced from the Proponent's Environmental Assessment)



1.1 Project Site

The existing Wilga Park Power Station is located nine kilometres to the south-west of Narrabri, within close proximity of the high voltage (66 kilovolt (kV)) Narrabri–Walgett electricity transmission line. Gas fuel supplies are currently sourced from the company's Coonarah Gas Field approximately 15 kilometres west of the site.

The development consent granted by Narrabri Shire Council enabled the facility to run at 12 MW capacity. The facility was constructed to 11 MW comprising 10 x 1 MW generators plus one contingency 1 MW generator (the latter since removed). However, since it commenced operation in July 2004, the power station has operated intermittently at 3 MW capacity due to declining gas supplies from the Coonarah field.

The proposed expansion of the power station to 40 MW includes an additional 0.5 hectares to accommodate 10 x 3 MW generators, a new workshop, control room, amenities and a new gas slab. The land accommodating the additional infrastructure at the power station is already disturbed containing some isolated scrub vegetation. The expanded power station will cover an area of 1.59 hectares and will be fenced. The site is wholly located within land owned by Narrabri Power Limited, a subsidiary of Eastern Star Gas.

The existing Bibblewindi Coal Seam Gas (CSG) pilot is located approximately 35 kilometres south of Narrabri and 7 kilometres east of the Newell Highway. The existing Bohena CSG pilot is located approximately 25 kilometres south-southwest of Narrabri and is bisected by the Newell Highway. The Proponent has received approval from the Department of Primary Industries – Minerals for the gas pilots under its Petroleum Assessment Lease 2 (PAL2). The pilot projects require venting of the gas as part of proving gas resources for potential future commercial production (subject to separate planning approval in the future). The Proponent proposes to pipe the gas that would otherwise be vented into the atmosphere to fuel the Wilga Park Power Station.

The proposed pipeline route is located south and south-west of Narrabri running along 32 kilometres route between the Power Station and Bibblewindi CSG Pilot, crossing the Newell Highway at the Bohena CSG Pilot towards Coonabarabran. A site location of the project is displayed in Figure 2.

1.2 Surrounding Land Use

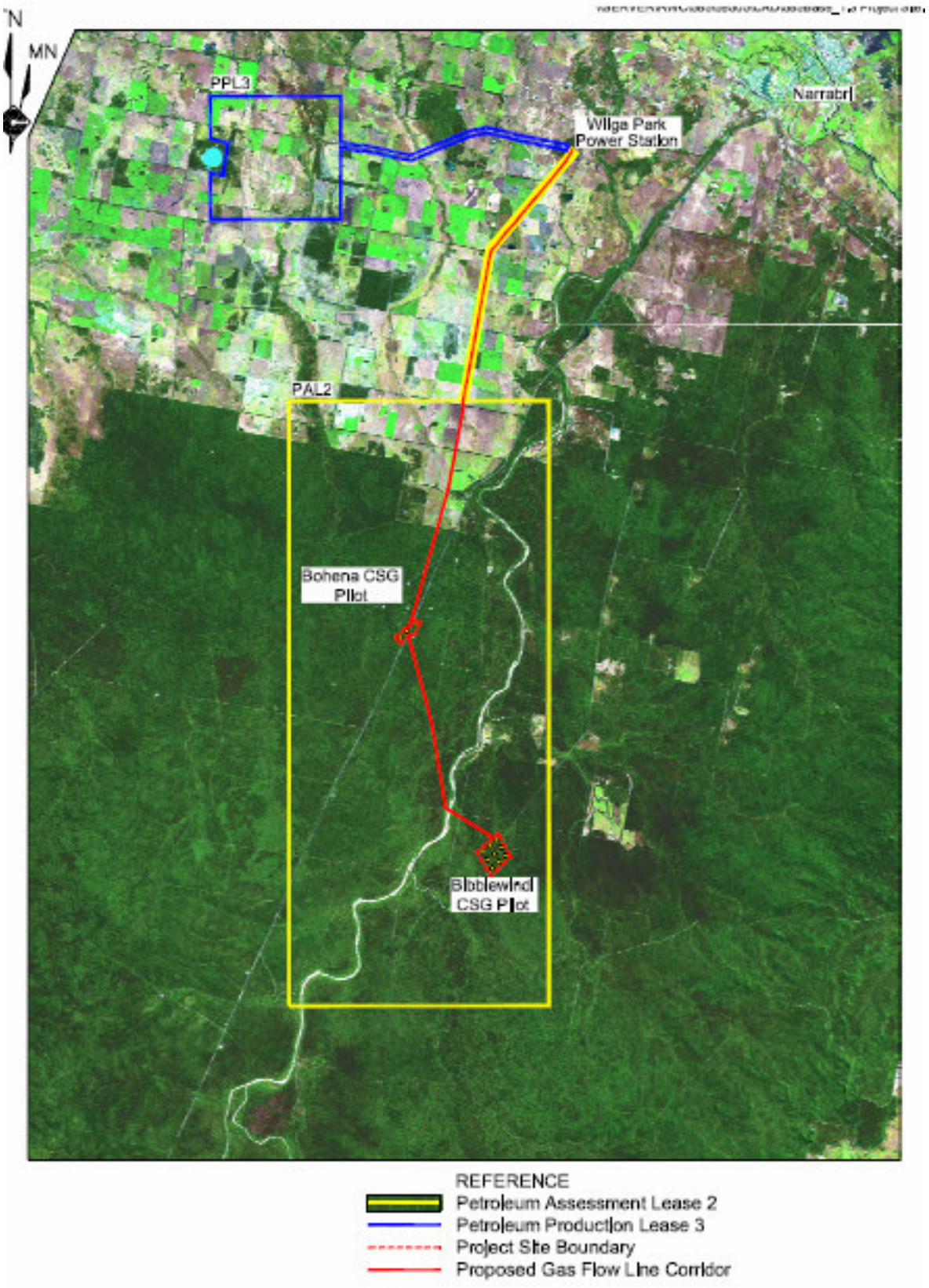
The Wilga Park Power Station is surrounded by cleared and partly vegetated agricultural land with 23 residential dwellings located within a four-kilometre radius. The closest residence to the power station is "Wilga Park", located 880 metres to the south-east.

Land occupying and surrounding the proposed gas flow line transverses two land use classification:

- 14kilometres within lands designated Crown Lands State Forest under the *Forestry Act 1916*; and
- 18 kilometres within lands designated Zone 1(a) (General Rural) under the *Narrabri Local Environmental Plan 1992*.

The forest zone varies from being lightly to heavily vegetated, while the farmland area varies from being highly disturbed and cleared grazing/cropping paddocks to isolated clumps/shelter belts consisting of native vegetation. The closest residence to the pipeline "Marooma" lies 200 metres west of the pipeline route.

Figure 2 - Site Location (reproduced from the Proponent's Environmental Assessment)



2. PROPOSED DEVELOPMENT

2.1 Project Description

The project involves four main components:

- the expansion of the Wilga Park Power Station from 12 MW maximum to 40 MW;
- construction and operation of gas gathering systems at the Bibblewindi and Bohena Coal Seam Gas Pilots;
- construction and operation of gas compression facilities at the Bibblewindi and Bohena Coal Seam Gas Pilots; and
- construction of a 32 kilometres long buried gas pipeline.

Power Station

The Wilga Park Power Station expansion and upgrade requires the installation of 10 reciprocating engine-driven generators with a capacity of 3 MW each. The expansion and upgrade would also require the building of a new workshop, control room, amenities and gas slab. The additional buildings would require an increase in site area by 0.5 hectare to 1.59 hectares. A perimeter fence would be built around the site. The existing substation would be upgraded to accept the increased output from the power station. The upgrade would require the installation of a larger transformer and additional circuit breaker equipment. The expanded site is presented in Figure 3.

Gas Gathering, Compression and Transfer Infrastructure

A gas gathering system (GGS) is composed of a network of small diameter (maximum 200 mm) high density polyethylene flow lines used to transport gas from the nine individual wells at Bibblewindi to the inlet hub and gas compression facility. The GGS would be laid in a trench with a minimum of 750 mm earth cover. A similar GGS will be installed at Bohena linking the three individual wells.

Gas compression systems are designed to increase the gas pressure from approximately 100 kilopascal (kPa) to 750 kPa and 1000 kPa and thus allow for the efficient transportation of coal methane gas to Wilga Park Power Station. The gas compression units will operate continuously and will be trailer-mounted in an enclosed unit. The units incorporate a gravity separation system to separate any water from the gas.

The gas pipeline will deliver compressed gas from the Bibblewindi and Bohena CSG Pilots to the Wilga Park Power Station. The gas pipeline will be approximately 32 kilometres in length. Installation of the gas pipeline would require a maximum 10-metre wide corridor to accommodate all construction activities. Where possible, the Proponent will use existing forestry tracks, fence lines and Shire road clearance envelopes.

As discussed in Section 1.1, the pilot projects do not comprise part of the project for which project approval has been sought as these comprise already approved components of the Proponent's exploration lease. Should the pilots progress to commercial production, the Proponent would need to progress separate planning approval for this as relevant. The Department's assessment of the pilots has been confined to the consideration of the availability of gas to fuel the power station in the long term.

2.2 Changes to the Project Since Exhibition

As part of its Environmental Assessment, the Proponent proposed the first section of its pipeline route to run between the gas well known as Bibblewindi-5 (Point A) to Bohena Creek Road (Point B). The Proponent subsequently revised the preferred corridor along the first three kilometres of pipeline (south to north) as part of its Response to Submissions. The preferred location of this section of the corridor was selected in response to the consolidation of above ground infrastructure (gas compression and water treatment) into one location at the Bibblewindi gas pilot project. The original pipeline location and revised location is shown in Figure 4.

Figure 3 - Power Station Layout (reproduced from the Proponent's Environmental Assessment)

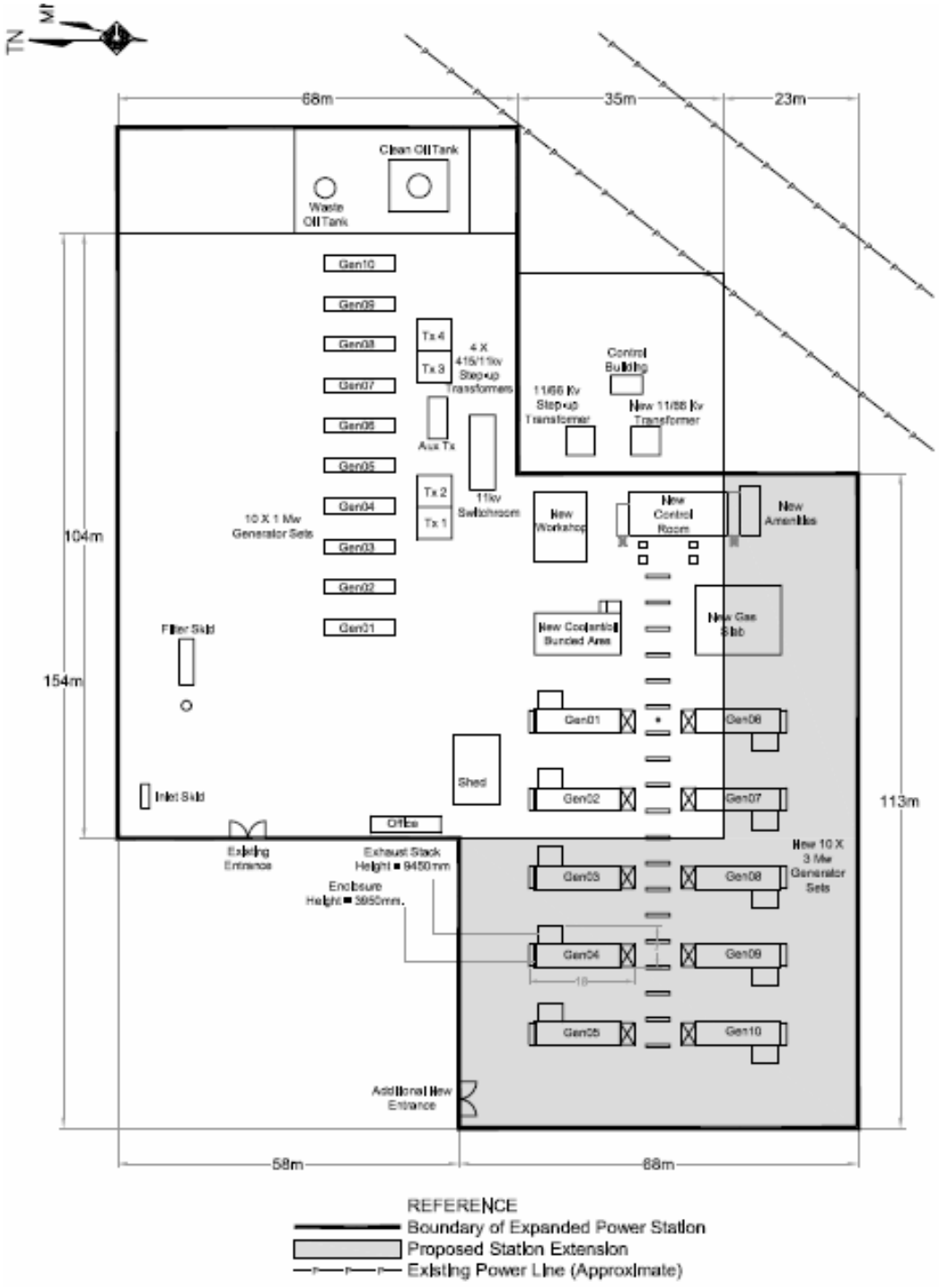


Figure 4 – Original and Revised Pipeline Routes (reproduced from the Proponent's Environmental Assessment and Submissions Report)

Original Alignment

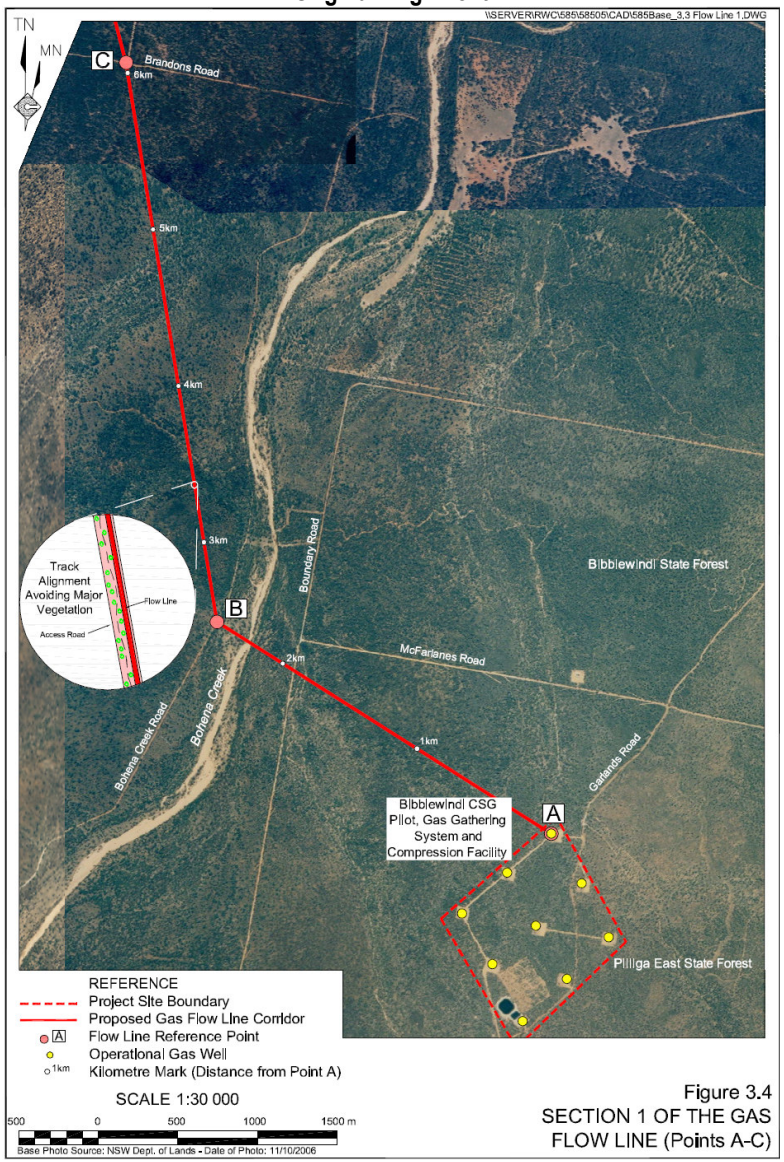


Figure 3.4
SECTION 1 OF THE GAS FLOW LINE (Points A-C)

Revised Alignment

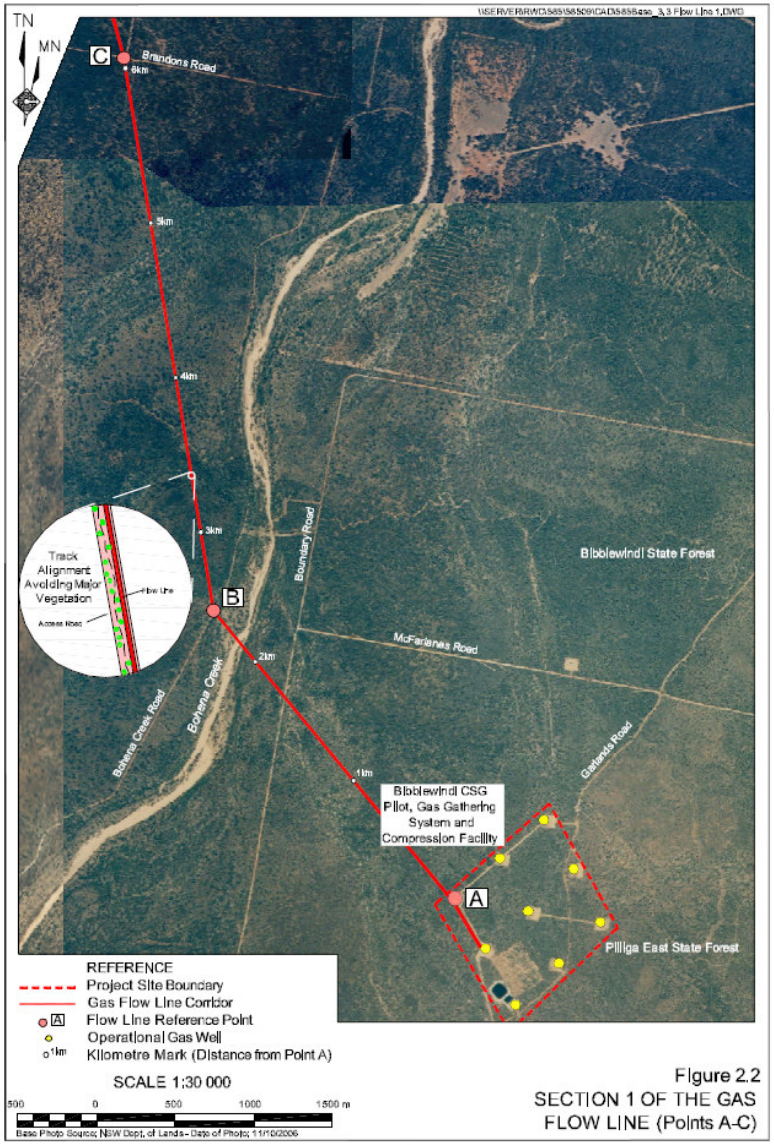


Figure 2.2
SECTION 1 OF THE GAS FLOW LINE (Points A-C)

2.3 Project Need

The project is a component of a wider exploration of Coal Seam Gas (CSG) resources being undertaken by the Proponent within Petroleum Exploration License 238 (PEL 238) covering an area of 9,100 kilometres^2 near Narrabri.

Underpinning the exploration is the demand for local gas supplies for power generation that have less greenhouse gas emissions per unit of energy generated (approximately 50%) compared with coal fired power generation. The National Electricity Market Management Company (NEMMCO) forecasts growth of overall electricity consumption in NSW to be 150 MW per annum over the next 10 years.

NSW is currently almost entirely dependent on gas imported from the Gippsland Basin (Victoria) and Cooper Basin (South Australia) and imports some 130 PJ of natural gas annually. The Cooper Basin is in decline and security of gas supplies is emerging as a major issue for government and industry. If local gas sources cannot be found, importation from Queensland or further a field is likely to become necessary resulting in price pressure associated with transport costs, and deterrence to the competitiveness and growth of the industry and expanded use of gas in more environmentally responsible applications, such as gas-fired electricity generation.

Under Petroleum Assessment Lease 2 (PAL 2), the Proponent has assessment rights that cover a 265 kilometres2 area incorporation the Bohena and Bibblewindi pilot wells. A key component to the certification of gas reserves to full Petroleum Production Lease (PPL) is the need to demonstrate gas production from pilot wells to establish production curves, the reliability of the gas reservoir and flow characteristics.

Extraction of coal-seam gas is a longer-term process compared with natural gas. The gas is held within the coal seam by water pressure and its extraction involves the coincident generation of water and gas. The extraction profile is characterised by higher initial rates of water production and little or no gas generation, before water production decreases and gas production increases. This process can take a number of years. During the lengthy testing period from commencement of production until the coal seam gas wells reach maximum rates of production, a significant amount of gas is produced in a cumulative sense which would be either vented into the atmosphere or flared in situ.

The Proponent seeks to utilise the gas from the testing wells by piping it to the Wilga Park Power Station while the long term viability of coal seam gas production is being tested. This is an attractive economic and environmental alternative to either the current practice of venting the gas to the atmosphere, or flaring the gas in situ – an option that has not been considered due to the location of the pilot wells in State forests.

In comparison with the upgrade or building of new coal-fired power stations, base load generation utilising coal-seam gas provides significant greenhouse gas and capital cost advantages. Simplified estimates of the volumes of carbon dioxide (CO_2) emitted from power generation indicate that coal releases approximately twice the volume of CO_2 than gas. Furthermore, in comparison to direct venting the use of coal seam gas for power generation represents a direct saving of greenhouse gas emissions due to the much higher methane content (25 times more effective as a greenhouse gas than CO_2) in directly vented gas compared to combustion emissions.

Although the proposed expansion of Wilga Park Power Station to 40 MW is small in comparison with the expected growth in electricity demand in NSW, it will nevertheless contribute to meeting this need, and is the maximum capacity allowable without further upgrade of the transmission system.
In addition, the Wilga Park Power Station will be a base-load operation since its purpose is to utilise gas from the pilot project, which is produced on a continuous basis. This will lead to a reduction in transmission system losses associated with the supply of electricity to Narrabri by between 1.5% and 6.5% and an improvement in system efficiency, as well as free up capacity within the NSW electricity transmission system.

The Proponent has an existing 10 year contractual arrangement with Country Energy for the supply of electricity. Due to the decline in availability of natural gas currently piped from the Coonarah Gas Field, the quantity of electricity and associated NSW Greenhouse Gas Abatement Certificates being supplied to Country Energy are below contracted levels. Sourcing gas from the Bibblewindi and Bohena CSG pilots will enable Wilga Park to revert to continuous operation and the fulfilment of existing contract commitments.

2.4 Department's Position

The Department is satisfied that the projected development is justified. It is acknowledged that managing and meeting demand in energy consumption will occur through a combination of measures, which include the construction of gas generated facilities. The expansion of Wilga Park Power Station would help meet this anticipated demand for base load electricity generation. Base load generation requires continual operation and therefore high efficiency levels, which can be delivered by the project.

The Department considers that the construction of a pipeline and associated infrastructure to transport coal-seam methane gas produced from pilot wells to an expanded power station is of net benefit as it is considered to be a more productive use of gas. As well as enabling an existing gas-fired power station to operate at full capacity, the proposed development compares favourably with the current practice of venting methane directly to the atmosphere, or the wasteful option of flaring test gases, including significant greenhouse gas savings.

The Proponent has demonstrated, based on an independent third party assessment, that sufficient gas resources are available at the pilot projects to supply the power station for at least 10 years. Furthermore, based on ongoing proving data, the Proponent has indicated that it expects that the fields would have sufficient gas for commercial production and to fuel the power station for up to and beyond 20 years. On the above basis, the Department is satisfied that the Bibblewindi and Bohena would have sufficient gas to fuel the power station for the duration of the Proponent's existing contact with Country Energy and likely well beyond. If a commercial gas production development proceeds the Wilga Park Power Station will continue to have a useful role to play in utilising gas from new wells that are being developed to supply the NSW gas market, or gas that is from time to time surplus to market requirements.

The Department notes that the Proponent's long-term aims are to prove sufficient gas reserves at the Bibblewindi and Bohena projects (to the satisfaction of DPI – Minerals) so as to enable progression from an exploration and proving phase to commercial production. Commercial production would trigger the requirement to obtain development consent for the gas wells at Bibblewindi and Bohena (which are currently at the proving stage and are covered by the provisions of the exploration licence, and therefore do not require development consent). Whilst there is no absolute guarantee that consent would be granted for the conversion of the Bibblewindi and Bohena gas wells from proving a stage to commercial production, the Department considers that the risk of consent not being granted would be low given that the wells would be essentially undertaking the same function (i.e. extracting coal seam gas) but for a different purpose (i.e. commercial production rather than for the purposes of proving a resource). The Proponent has advised that commercial gas production at the rate required to fuel the Power Station would essentially be the same as the proposed operations under the proving stage (including the use of same infrastructure arrangements such as the gas gathering and compressions facilities and pipe line and as such not involve any significant change or additional disturbance to the project as currently proposed.

On this basis, the Department consider that the potential risk to power station fuel security (on the basis of development consent not being granted for the conversion from proving to commercial production at Bibblewindi and Bohena gas fields) is low and would not preclude the Department from recommending approval for the expansion of the power station. Furthermore, as conversation to commercial production would continue to utilise the infrastructure proposed as part of the current project, the Department is satisfied that these infrastructure would not become redundant following completion of the proving stage but rather have a long-term use.

3. STATUTORY CONTEXT

3.1 Major Project

On 20 April 2007, the Director-General, as delegate of the Minister for Planning, formed the opinion pursuant to clause 6 of *State Environmental Planning Policy (Major Projects) 2005* (Major Projects SEPP) that the proposal is for the purpose of development described in Schedule 1 to that Policy (clause 24(a) – development for the purpose of an electricity generation facility that has a capital investment value of more than $30 million for gas or coal-fired generation). The proposal is thus declared to be a project to which Part 3A of the *Environmental Planning and Assessment Act 1979* (the Act) applies.

3.2 Environmental Planning Instruments and Permissibility

The *Narrabri Local Environmental Plan 1992* applies to the site of the proposal including the Wilga Park Power Station, the gas flow line, the gas gathering system and gas compression facilities. The project is located on land zoned No 1(a) (General Rural). The project is permissible with development consent. No other environmental planning instruments apply to the proposal that substantially govern the carrying out of the development.

3.3 Other Approvals

The gas flow line does not require a licence under the *Pipelines Act 1967* since the pipeline will be used for the purposes of recovery of petroleum and is low pressure and therefore does not require licensing. The Proponent received confirmation of this from the Department of Primary Industries on 2 October 2007.

3.4 Minister's Approval Power

The Proponent submitted an Environmental Assessment with to the Director-General in April 2008. Pursuant to Section 75H and 75I(2)(g) of the Act, the Director-General was satisfied that the Environmental Assessment had addressed the environmental assessment requirements specified in the Director-General's Requirements issued for the project on 17 July 2007.

The Environmental Assessment were placed on public exhibition for an extended period from 22 May 2008 to 7 July 2008 and submissions were invited in accordance with Section 75H of the Act. The Environmental Assessment was also made publicly available on the Department's web site. A copy of the Environmental assessment is provided in Appendix D.

Following the exhibition period, the Director-General directed the Proponent to respond to the issues raised in submissions. As the project will require an Environment Protection Licence under the *Protection of the Environment Operations Act 1997*, a copy of the submissions were also provided to the Department of Environmental and Climate Change, pursuant to Section 75GH of the Act. The Response to Submissions (see Appendix C) prepared by the Proponent was subsequently made publicly available of the Department's website.

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

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

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

(a) to encourage:

- *(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment;*
- *(ii) the promotion and co-ordination of the orderly and economic use and development of land;*
- *(iii) the protection, provision and co-ordination of communication and utility services;*
- *(iv) the provision of land for public purposes;*
- *(v) the provision and co-ordination of community services and facilities;*
- *(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats;*

(vii) ecologically sustainable development;
(viii) the provision and maintenance of affordable housing; and

(b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State; and

(c) to provide increased opportunity for public involvement and participation in environmental planning and assessment.

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

It is important to recognise, that while the EP&A Act requires that the principles of ecologically sustainable development be encouraged, it provides other objects that must equally be included in the decision-making process for the subject proposal. The Department has considered the need to encourage the principles of ecologically sustainable development, in addition to the need for the proper management and conservation of natural resources; the orderly development of land considering land use; and the protection of the environment species in Section 5 of this report. The agency and community consultation undertaken as part of the assessment process (see Sections 3 and 4 of this report), address objects 5(b) and (c) of the Act.

3.6 Nature of the Recommended Approval

The Minister's approval was sought for the expansion of the existing Wilga Park Power Station near Narrabri, utilising gas that would otherwise have been vented into the atmosphere from the Proponent's Bibblewindi and Bohena coal seam gas pilot projects located in the Bibblewindi and Pilliga East State Forests. The Proponent has sought approval for the expanded power station as well as gas gathering, compression and pipeline infrastructure to transport the gas to the power station.

The Department has assessed the project and considers the key issues to be potential flora and fauna and Aboriginal heritage impacts associated with the additional land disturbance required for the gas pipeline and gathering lines and additional air quality and noise impacts associated with the expanded power station.

Based on its assessment the Department is satisfied that the project would not impact on any Aboriginal heritage items and that its flora and fauna impacts can be appropriately offset. Furthermore, the Department is satisfied that the operation of the expanded power station would achieve relevant air quality and noise criteria at all existing receivers and that potential noise impacts to undeveloped land can be mitigated through the implementation of stringent noise mitigation and land acquisition requirements.

An instrument of project approval has been created, establishing stringent environmental standards, mitigation measures, environmental controls and monitoring requirements that the Proponent must meet during the construction and operation of the project.

4. CONSULTATION AND ISSUES RAISED

4.1 Public Submissions

The Department received two public submissions of which one raised an objection to the project and one did not state a specific position. Both submissions raised issues regarding the potential noise impacts of the expanded power station on existing receivers and rural lifestyle and on undeveloped land (in affecting future development potential).

4.2 Submissions from Public Authorities

Five submissions were received from public authorities: NSW Rural Fire Service; NSW Department of Lands; NSW Department of Climate Change; NSW Department of Primary Industries; and Narrabri Shire Council. None of the agencies objected to the proposal, however, raised issues for the Department's consideration.

NSW Rural Fire Service (RFS)

The RFS does not state a position regarding the project, but recommended a number of approval conditions which require that the Proponent to:

- identify adequate asset protection zones in accordance with *Planning for Bush Fire Protection 2006* to minimise the impact of radiant heat and direct flame contact;
- provide adequate egress/access to the development as outlined in section 4.1.3 of the *Planning for Bush Fire Protection 2006*;
- provide adequate future water supplies for bush fire suppression operations;
- minimise the vulnerability of building and structures to ignition from radiation and ember attack by addressing the construction of assets in accordance with Australian Standard AS 3959-1999 *Construction of buildings in bush fire-prone areas*; and
- take into consideration future bushfire hazard management regimes should adjacent lands be developed.

NSW Department of Lands

The Department of Lands raised no objection to the project and noted that it was satisfied with the level of information provided in the Environmental Assessment.

NSW Department of Environment and Climate Change (DECC)

DECC does not state a position regarding the project, however, advised that the project would require a licence under the *Protection of the Environment and Operations Act 1997*. DECC considers that a number of issues have not been satisfactorily addressed in the Environmental Assessment and recommends that project approval should not be granted until such a time as these issues have been satisfactorily addressed. DECC raised the following issues:

- potential for future land use conflict if residences are built within vacant land predicted to be noise affected;
- noise modelling was based on noise monitoring using existing 1MW generator, however, the proposal will involve 3 MW units;
- there is no commitment regarding the preparation of an Erosion and Sediment Control Plan for both the construction and operational phases;
- concern regarding the crossing of Bohena Creek due to potential impacts from trenching across the creek;
- lack of information regarding gas treatment prior to power generation;
- a flora assessment has not been provided for the northern section of the pipeline. DECC indicates that it is likely that Ecological Endangered Communities are present in the understorey as well as native grassland species;
- the Proponent has not fully investigated all possible routes for the pipeline especially those which may minimise the clearing of native vegetation;
- offset strategies have not been proposed. DECC recommends the use of Biobanking principles;
- inadequate vegetation community mapping – extent, distribution and proximity to proposed infrastructure not indicated;

- flora and fauna survey effort not clearly specified. The flora and fauna survey effort should encompass both the preferred and alternative pipeline routes;
- access to the gas flow line corridor not identified in the Environmental Assessment. The Statement of Commitments does not include an undertaking to avoid the clearing of native vegetation;
- a number of inclusions into the Weed Management Plan have been proposed by DECC;
- air emissions monitoring to validate the performance of NOx emissions should be included in conditions of approval;
- concerns with current practice of venting methane direct to air. DECC encourages the Proponent to utilise the gas for power generation or alternatively safe flaring through enclosed flaring systems;
- the Aboriginal community consultation was not conducted in accord with the *Interim Community Consultation Guidelines to Applicants* (DEC, 2004). There is no evidence that formal notification and advertisement of the Project in the local print media has occurred and that all Aboriginal groups or individuals with a possible interest have been afforded the opportunity to register an interest and/or participate in the survey and assessment of the Project area;
- the Aboriginal heritage assessment does not provide sufficient detail of the nature and type of known sites within the vicinity of the proposed corridor. Therefore, DECC is unable to support either the preferred route or the conclusions that there would be no likely impacts to Aboriginal cultural heritage;
- the Aboriginal cultural heritage survey limit to 10m wide flow line easement is not adequate since it does not enable any consideration of the significance of the landscape context of any Aboriginal object and/or site;
- the Aboriginal cultural heritage was limited to the preferred route only; and
- as further pilot production bores are developed, there will be cumulative impacts and it is not clear whether these will be linked into the proposed pipeline or otherwise managed.

NSW Department of Primary Industries (DPI)

DPI states no objection to the project. DPI notes that the Proponent currently has Petroleum Assessment Leases granted by DPI under the *Petroleum (Onshore) Act 1991*. Should the gas project proceed to full scale commercial production then the Proponent would need to apply for a Petroleum Production Lease before operations can commence. DPI also provides the following comments:

- the pipeline route should use existing cleared corridors in the Bibblewindi and Pilliga East State Forests to avoid the need to clear native forests;
- the proposed pipeline corridor should be constrained to 10 metres wide to minimise clearing impacts;
- the EA does not provide information regarding the final land use and closure criteria for the pipeline corridor. The EA does not specify whether the pipeline is to be left in-situ at the end of the project;
- DPI recommends that additional production drilling should be covered by the current Part 3A assessment since any subsequent wells will not be able to be tied into the pipeline;
- provisions for green offsets have not been specified;
- requirements for Annual Reporting regarding land ownership, any damage to land, details of pipeline surveillance; and
- requirements for abandonment plans.

Narrabri Shire Council

Narrabri Council strongly supports the project due to the benefits that gas production and increased electricity production would bring to the area and in terms of increased investment, employment and career development. Council requires that the Proponent consult with them regarding pipeline crossing affecting roads under the control of Narrabri Council.

4.3 Response to Submissions

A copy of the seven submissions received during the exhibition of the Environmental Assessment was referred to the Proponent at the conclusion of the exhibition period and the Proponent was directed to prepare a response to the issues raised in the submissions.

The Proponent submitted a Response to Submissions to the Department in September 2008. This included a Preferred Project Report describing some amendments made to the preferred pipeline corridor and a finalised Statement of Commitments. The Response to Submissions was forwarded to the DECC for comment. The

DECC confirmed that it was satisfied that the additional information provided in the Proponent's Response to Submissions had addressed the outstanding matters raised in its original submission and that it was able to grant a license for the project. The Department has considered the DECC's recommendations in formulating recommended conditions of approval for the project.

4.4 Department's Consideration

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

Table 1 - Overview of Department's Consideration of Issues Raised in Submissions

Issue	Department's Consideration
Operational noise impacts	Section 5.1
Noise modelling methodology	The Department is satisfied that the Proponent has adequately demonstrated the adequacy of the noise modelling undertaken for the project. The Proponent's Submissions Report included revised noise modelling taking into account the 3 MW generators. Following review of the Submissions Report, the DECCC indicated that it was satisfied with the revised assessment. The Department's detailed consideration of operational noise impacts is provided in Section 5.1.
Air quality	Section 5.2
Flora and fauna impacts including survey effort and biodiversity offsets	Section 5.3
Aboriginal heritage	Section 5.4
Hazards / bushfire risk	The Proponent has demonstrated that the required setback protection zones for the development are currently in place, and that sufficient safe operational access and egress pathways exist for emergency service personnel. All surface infrastructure will be located in cleared agricultural lands within existing facilities and no buildings will be constructed in state forests. Sufficient water will be available to the Rural Fire Service, as outlined in the Statement of Commitments. The Department's recommended conditions include the requirement for a fire safety study prior to the commencement of construction.
Venting of methane	The current practice of venting methane to the atmosphere during the gas exploration stage is permitted under license from the DPI – Minerals. However, the Proponent has advised that enclosed flaring options as an alternative to direct venting of methane gases has not been considered to be viable as this option requires a larger area of cleared land within State forests. The Department notes that the beneficial use of the gas rather than venting to the atmosphere forms the subject of this application.
Future pilot production wells / Petroleum Production Lease (PPL)	The Department notes that the change in gas production from the proving stage to full commercial production will require a separate planning approval, which is outside the scope of the current project.
Pipeline abandonment / decommissioning plans	There are currently no decommissioning plans for the pipeline. The Proponent estimates an operating life span in excess of 20 years, with further discussion of final land use and closure criteria to occur during any further review of PAL2, and any conversion to a production license. The Department has recommended in its Conditions of Approval that details for decommissioning of the pipeline be included in the Operational Environmental Management Plan.
Justification for the chosen pipeline corridor and disturbance associated with pipeline construction	The Department has assessed the Proponent's consideration of route alternatives and is satisfied that the preferred pipeline route has been chosen on the basis that it is likely to have the least cumulative environmental impact upon flora, fauna and Aboriginal heritage both for the 14 kilometres through State forests and the remaining 18 kilometres length of corridor running through agricultural lands. The Department accepts that

Issue	Department's Consideration
	the pipeline route was modified at the outset to minimise the impact on remaining native vegetation in paddocks. The Proponent has further committed to limiting the construction width associated with the pipeline corridor to 10 meters to minimise unnecessary vegetation clearance and ground disturbance (and associated potential heritage impacts). Furthermore, the Proponent has committed to implementing horizontal directional drilling rather than open trenching at creek crossings to ensure minimal impacts to creek hydrology and habitat as well as to protect heritage values associated with creek lines that may be disturbed through extensive ground disturbance around waterways. The Department is satisfied that with the implementation of these measures the disturbance associated with the pipeline can be kept to a minimum and has recommended conditions of approval to reinforce the Proponent's commitments in this regard.
Pipeline corridor access	The Department is satisfied that these matters have been adequately addressed in the Proponent's Response to Submissions and / or Statement of Commitments.
Gas treatment prior to its use in the power station	
Erosion and sediment control	

5. ASSESSMENT OF ENVIRONMENTAL IMPACTS

After consideration of the Environmental Assessment, submissions, Response to Submissions and Statement of Commitment the Department has identified the following key environmental issues associated with the proposal:

- noise impacts
- air quality impacts and aviation hazards;
- biodiversity impacts; and
- Aboriginal heritage impacts.

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

5.1 Noise Impacts

Issue

The proposed development would involve the expansion of the Wilga Park Power Station through the incorporation of 10 additional three megawatt (MW) engines to the 10 x 1 MW engines that have already been constructed as part of the existing approval. The expansion of the power station has the potential to increase the operational noise generated by the power station. The remaining components of the project (gas gathering and compression facilities and pipeline) are not expected to generate operational noise that would be audible at nearby receptors.

As part of the Environmental Assessment, the Proponent prepared an operational noise impact assessment in accordance with the *New South Wales Industrial Noise Policy* (EPA, 2000) (INP) with modelling based on the 1 MW engines currently used at the power station. However, following concerns raised by the DECC regarding whether the noise modelling would be representative of the operations proposed as part of the expanded power station, the Proponent undertook a revised assessment as part of its Response to Submissions with modelling based on the engine type (three megawatt) and mitigation (acoustic enclosure of each generator) proposed as part of the expanded operations.

The Proponent also undertook an assessment of the potential construction noise impacts and traffic noise impacts of the project during its construction and operation.

Both submissions received on the project raise concerns regarding the operational noise impacts of the expanded power station on existing rural residential receivers and on the development potential of vacant lots with dwelling entitlements. The DECC also raised concerns regarding potential land use conflicts associated with the operational noise impacts of the expanded power station.

Consideration

Construction Noise

Due to the significant distance to nearby existing residences, the Department is satisfied that the noise generated by the construction phase of the proposed development would not create adverse impacts at the nearest receivers and can be managed through standard mitigation measures such as the choosing of quiet plant and machinery, and appropriate location of the plant. Furthermore due to the relatively minor traffic volumes proposed to be generated by the proposal during its construction (30 vehicles per day) and operation (six vehicles per week), the Department is satisfied that the proposal is unlikely to noticeably increase traffic noise levels on affected roads. The Department recommends that the Proponent prepare and implement a Construction Environmental Management Plan to ensure that construction-related impacts, including noise generation, are mitigated and managed consistent with best practice.

Operational Noise – Existing Receivers

The project's Noise Assessment indicates that the operation of the 40 MW power station would meet noise levels of 35 dB(A) (ie. 5 dB(A) above the assumed lowest background noise level in the INP) at all existing residential receivers. However, it notes that compliance is marginal at the nearest residence, "Wilga Park", and that operations at the power station may exceed criteria at this receiver under adverse meteorological conditions.

Table 2 compares noise levels at "Wilga Park" under current operations, with the existing approved capacity, and proposed expanded capacity.

Table 2 - Predicted Operation Noise Levels at "Wilga Park"

Predicted operational noise levels dB(A), $L_{eq(15\ minute)}$ with generators running at:	Meteorological Condition			
	Neutral	Inversion	SE wind	NW wind
3 MW (current part capacity)	23	25	<20	25
10 MW (current max capacity)	28	30	22	30
40 MW (proposed capacity)	32	34	27	35

The Department is generally satisfied that the Proponent has undertaken a robust and conservative assessment of operational noise impacts in accordance with the Industrial Noise Policy and has demonstrated that the expanded power station can be operated to achieve acceptable noise criteria at existing receivers. Although the Proponent has suggested that there is potential for exceedances of noise criteria at the most-affected receiver under worst-case meteorological conditions, the Department suggests that this is a conservative view and the inherent conservatism in the assumptions and methodology applied to noise assessment provide a reasonable level of certainty that acceptable environmental and outcomes could be achieved. It is highlighted from the information presented in the Table above that worse case conditions suggest a noise impact at the closest existing residence equal to the applicable noise criterion. The Department is satisfied on this basis, and noting issues of modelling conservatism, that this noise criterion could be met. Further, if in fact actual operating conditions result in an exceedance of this criterion, the Department notes that not only would the potential frequency of exceedance be minimal (noting the relatively limited occurrence of worst-case weather conditions), but retrospective application of at-source noise mitigation would be available.

To ensure that noise criteria are in fact achieved in reality, and to provide an additional level of security for potentially-affected residential receptors, the Department has recommended conditions of approval requiring the proponent to implement all reasonable and feasible at source noise mitigation measures at the expanded power station to achieve a noise goal of 35 dB(A) at all existing receivers. Should monitoring show that this criterion is exceeded, the Department has recommended conditions of approval requiring the Proponent to investigate and implement additional mitigation measures at the affected receiver itself with the agreement of the landowner, unless an alternative noise agreement can be entered into with that owner in accordance with the Industrial Noise Policy.

Operational Noise – Vacant Land

In addition to existing residential receivers, the proposed project is surrounded by several parcels of land that are currently vacant, but are appropriately zoned for potential future rural residential development. The Proponent's noise assessment has considered potential impacts on these properties, and the possibility of future land use conflicts between the project and any future residential development that may occur on those properties. The noise modelling presented in the Environmental Assessment includes an estimate of the areas of vacant land (which have an existing dwelling entitlement) that would be affected by noise generated by the expanded power station. The extent to which land adjoining the power station would be affected by the expansion is illustrated on the noise contour map in Figure 5. The map shows three adjoining vacant properties that would experience noise levels above 35 dB(A) as a result of the expansion (shaded grey). The extent of the additional impact is demonstrated in Table 3 which compares the 40 MW scenario for the already approved 12 MW power station under worst case meteorological conditions.

The three properties with dwelling entitlements that are expected to be affected by noise from the project are properties E (P Hardcastle), O (J Williams) and B (R&D Cochrane). Property A is the project site.

Figure 5 - Noise Impacts from 40MW Generators under Inversion Conditions (Reproduced from Additional Information Provided by Proponent)

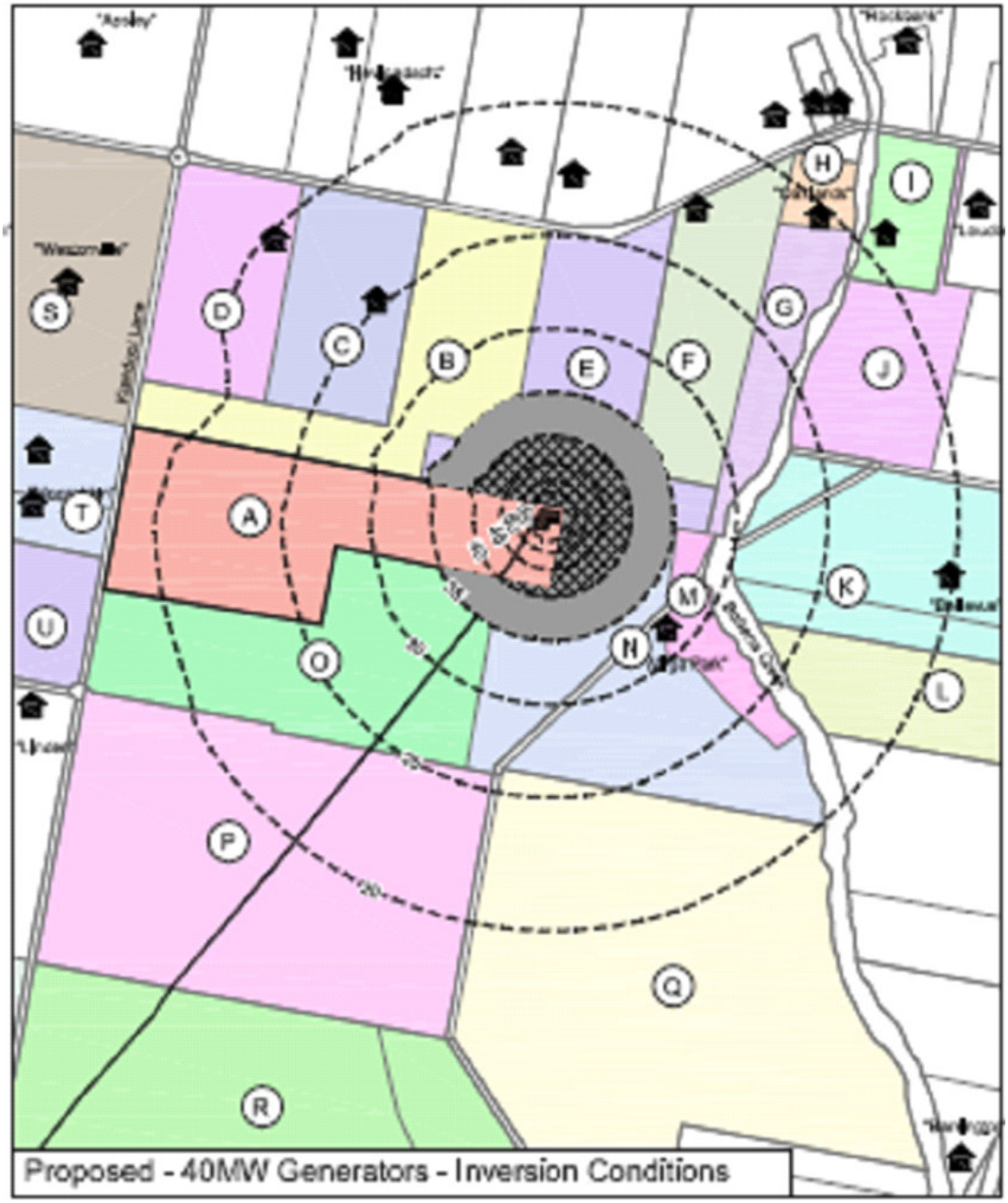


Table 3 – Areas of Adjoining Properties Affected by Greater than 35dB(A) (Hectares (% of Lot))

Property	Approved 12MW	Proposed 40 MW			
	Inversion	Calm	SE Wind	NW Wind	Inversion
E (P Hardcastle)	37 (24%)	65 (43%)	58 (38%)	43 (28%)	66 (43%)
O (J Williams)	0	8 (4%)	4 (2%)	3 (2%)	6 (6%)
B (R&D Cochrane)	0.3 (0.2%)	7 (5%)	13 (9%)	0	6 (4%)

Of the three vacant properties which would experience above 35 dB(A), only one property is predicted to have a significant portion of its land affected, that being the Hardcastle property (Reference "E") with a maximum of 43% of the lot predicted to be noise affected under the worst-case scenario (i.e. a 19% increase in the area of land affected from 24% to 43%) . Of the remaining two properties, only a marginal increase in the area of land affected (a maximum of 9%) is predicted to result from the expansion of the power station.

The Proponent has suggested that construction of a dwelling within the noise affected zone of any of the adjoining vacant properties is unlikely as noise affected land is at the rear of these properties, and the current pattern of development shows dwellings generally positioned at the front of the properties within 200 metres to 400 metres of the road (for ease of access and to limit driveway length etc.) – well outside the area of noise affectation. This position has been disputed by the owner of Reference "E", who argues that incentive to build a dwelling at the rear of the site (even within the noise affected area) exists. Notwithstanding this, no current approval exists for a dwelling at Reference "E" from Narrabri Shire Council, and any proposal to build would be constrained by the noise impacts from the approved 12 MW scenario. In this context, the Department considers it important to minimise the potential for the proposed project to increase noise impacts beyond those associated with the existing and approved power station – that is, to generally no more than one quarter of the site.

In order to minimise the noise impact, the Department has recommended conditions of approval requiring the Proponent to design the power station inclusive of reasonable and feasible at-source noise mitigation measures. In addition, the Department recommends conditions of approval that the Proponent undertakes noise monitoring beyond the existing approved capacity (12 MW) at every stage that new generation capacity is added to the power station, and that should there be greater than 25% of land noise affected (greater than 5dBA above the noise criteria of 35 dB(A), then the affected land shall have acquisition rights. This means that the Proponent would have to acquire the Property at market value (such as if the property was not noise affected) at the landowner's request. The threshold for triggering acquisition for vacant land has been set at 5 dB(A) above the noise level of 35 dB(A) to take into account the fact that in absolute terms the noise levels generated by the project would are relatively low and that even at 40dB(A) would remain well below the maximum allowable amenity criteria for existing rural dwellings under the INP.

This approach places the onus of the Proponent to take proactive measures to minimise noise emissions from the project at the source. The Department considers that there remains a number of reasonable and viable options for further at-source mitigation, including technology selection, acoustic treatments (shrouding, enclosures) and potentially acoustic barriers on the project site. Should all of these additional measures, when taken in concert, fail to constrain noise impacts within the acoustic envelope associated with the existing and approved power station, then two options remain for the Proponent: operate the power station only in a manner that does not extend the approved acoustic envelope (eg operate at reduced capacity or under only certain meteorological conditions), or resolve the potential conflict through acquisition of the affected property at the request of the landowner and subject to just terms compensation provisions.

The Department is satisfied that the direct impacts to private property have been addressed and that potential impacts can be managed provided the Department's recommendations of at source mitigation and noise monitoring and associated acquisitions are carried out.

5.2 Air Quality Impacts

Issue

The expansion of the Wilga Park Power Station will involve the installation of 10 x 3 MW gas engines to operate in conjunction with the existing 10 x 1 MW gas engines. This has the potential to impact upon local air quality through the increased exhaustion of gases resulting from the combustion of the coal seam gas. The emission of principal concern is nitrogen oxides (NOx).

The Proponent undertook an air quality assessment involving dispersion modelling to determine the impact of nitrogen dioxide (NO_2) emissions from the Wilga Park Power Station. The assessment was conducted in accordance with the guideline *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (DECC, 2005) which also sets out impact assessment criteria for various air quality parameters, including NO_2.

Two methods of calculating worst case ambient concentrations of NO_2 were utilised, one a highly conservative approach and one which seeks to represent NO_2 chemistry more closely. Both methods indicated that the predicted worst-case NO_2 concentrations are anticipated to be below the health based impact assessment criteria in the DEC (2005) guideline of 246 μgm^{-3} (1 hour average) and 62 μgm^{-3} (annual average) at all nearby residential receptors. Maximum predicted ground-level concentrations presented in the Environmental Assessment are 186 μgm^{-3} (1 hour average) and 20 μgm^{-3} (annual average), which compare favourably with these criteria.

The Proponent also undertook a plume rise assessment to determine the potential for the exhaust plume from the power station to impact on aircraft. The assessment was undertaken in accordance with the Civil Aviation Safety Authority (CASA) Advisory Circular *AC 139-05(0) Guidelines for Conducting Plume Rise Assessments* and concluded that the velocity and height of the exhaust plume are such that it would not cause damage to aircraft or upset aircraft flying at low levels.

In addition to operational impacts, construction activities associated with the project have the potential to impact on air quality in the short term through the generation of fugitive dust emissions. The Proponent has committed managing dust using standard techniques including suppressing dust along site access roads and tracks, limiting topsoil stripping and trenching during high winds, and progressively rehabilitating the gas flow line corridor.

The DECC recommended that the Proponent be required to undertake air emission monitoring upon operations to validate NOx emissions and ongoing testing, subject to review by the DECC, pending emission results. The recommendation included a list of the pollutants to be monitored at the discharge exhaust stacks for all of the gas generators and the frequency of measurement, as well as a 100 percentile concentration limit of 450 mgm^{-3} for nitrogen oxides.

Consideration

Construction Impacts

The Department acknowledges that dust can be generated from the project during the construction of the gas flow line from the Bibblewindi plant to the Wilga Park Power Station and the upgrade of the power station. Dust not only has an adverse visual impact, but also is a nuisance factor. The Department accepts that provided the nominated environmental commitments are implemented during construction, dust generation from the project would be limited. In addition, due to the large buffer distance between the power station and the nearest residence (880 metres) and the low density of residences along the pipeline route, the potential for dust nuisance will be limited.

To minimise the potential for fugitive dust emissions, the Department has recommended a condition requiring the Proponent to construct the project in a manner that minimises dust emissions from the site and implement all practicable dust mitigation measures, including cessation of relevant works, should their be visible dust emissions.

Operational Air Quality Impacts

To limit the potential for adverse air quality impacts, the Department, in consultation with the DECC, has recommended a maximum allowable air discharge concentration limit of 450 mgm^{-3} for oxides of nitrogen at the discharge stacks of the gas generators (consistent with the requirements of the *Protection of the Environment Operations (Clean Air Regulation) 2002*. The Proponent has indicated that the proposed gas generators to be installed represent the most advanced electricity generation systems available at the present time and best practice in emission control, and would meet the discharge concentration limit.

The closest residential receiver to the power station is "Wilga Park" located approximately 880 metres to the south-east of the power station with the next closest located over 1.5 kilometres to the north-west. Based on the outcomes of the air quality modelling, the Proponent has concluded that the proposed upgrade to the power station will not have a detrimental impact upon the surrounding residential receivers in that the predicted 1 hour maximum and annual average NO_2 concentrations would be well within the DECC impact assessment criteria at all identified receivers.

The Department is satisfied that the modelling undertaken by the Proponent is adequate based on the information available. However, the Department acknowledges that existing air quality with respect to NO_2 is not well

characterised and that the Proponent's conclusions are based on the assumption that NO_2 data from Beresfield (some 320 kilometres south east of the project site) are indicative and a conservative estimate of background levels at Wilga Park. In addition, due to an absence of mass emission rate data from the existing gas stationary turbines, the National Pollution Inventory *Emission Estimation Technique Manual for Fossil Fuel Electric Power Generation* (2005) was used to obtain oxides of nitrogen emission factors.

In light of this the Department has recommended conditions of approval requiring the proponent to regularly monitor stack emissions to ensure that the emissions from the site remain well below the specified air discharge concentration limit for oxide of Nitrogen.

The Department has also recommended that the Proponent be required to undertaken an operational air quality impact assessment to verify predicted ground-level concentrations of air pollutant at nearest sensitive receivers, with modelling based on actual air emissions data collected at the power station stacks and consistent with the methodology provided in *Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (DECC, 2007)*. The Department has also recommended that the Proponent be required to develop and implement remedial measures should the impact assessment indicate air pollutant impacts at receptors in excess of those predicted by the Proponent's Environmental Assessment or in excess of the impact assessment criteria specified in the DECC's guidelines.

Operational Plume Rise Impacts

With regard to plume rise impacts, the Proponent's assessment indicates that the exhaust plume associated with the expanded power station would not at any point exceed CASA's critical velocity criterion of 4.3 metres per second (m/s). The Assessment indicates that the power station's exhaust plume would reach its maximum velocity (of 4.2 m/s) at a height of 24 metres above ground level which is well below the height set by CASA (110 metres above ground level) as requiring particular consideration (being the height at which most aircraft operate). AT a height of 110 metres the vertical velocity of the plume is predicted to 1.67 m/s well below CASA's criterion. Similarly the vertical velocity of the plume is predicted to be well below CASA's criterion at the maximum vertical extent of the plume (ie. 0.99 m/s) at 531 metres).

On this basis the Department is satisfied that the plume rise associated with the expanded power station is unlikely to result in adverse i9mpacts to aircraft operations or safety. Notwithstanding this, the Department considers that the Proponent should be required to consult with CASA and Air Services Australia prior to the commencement of operation to ensure that the power station is designed to achieve acceptable plume rise standards; and has recommended conditions of approval in this regard.

Overall, the Department is satisfied that the Proponent's proposed mitigation measures and the Department's recommended conditions of approval should provide the necessary mitigation measures to minimise the air quality and plume rise impacts of the project and meet the relevant air discharge concentration and plume vertical velocity limits.

5.3 Biodiversity Impacts

Issue

The power station is located on largely cleared and disturbed land. Biodiversity impacts at the power station site would be limited to the removal of limited scrub vegetation to accommodate the expansion. The main biodiversity impacts of the project would be centred around the construction of the gas pipeline corridor, which would traverse State forest land for a significant portion of its length (approximately 14 kilometres). The proposed gas gathering lines and compression facilities located within State forest at the Bibblewindi and Bohena pilot projects, would be sited on existing cleared areas wherever possible (utilising existing access tracks and the like), however some vegetation clearing would be required for these facilities.

The Proponent has estimated that the project would require the clearance of approximately 13.1 hectares of vegetation mostly for the pipeline corridor located within State forest. Vegetation communities to be cleared have been identified as:

- Narrow leaved Iron Bark *Eucalyptus crebra* Dry Open Forest (7.6 hectares);
- Rough-barked Apple *Angophora sp*. Dry Open Forest (3.0 hectares); and
- Red Gum *Eucalyptus dwyeri* Woodland (2.5 hectares).

The clearance corridor for the pipeline would be a maximum 10 metres wide for machinery access and operation during construction. The Proponent proposes to rehabilitate the site at the completion of the pipeline across 7 metres of the corridor, with three metres left clear for maintenance purposes for the duration of the project's operational life.

Two submissions from the DECC and DPI raised concerns regarding the ecological impacts of the proposal, including on survey effort and the requirements for biodiversity offsets.

Consideration

The Department is satisfied that the Proponent has undertaken a robust and conservative flora and fauna assessment consistent with the (Draft) *Guidelines for Threatened Species Assessment* (DECC, 2005) and has demonstrated that the project has been designed and located to avoid biodiversity impacts as far as practicable.

The Proponent has calculated 13.1 hectares of native vegetation that shall be substantially modified during the construction of the pipeline. The Department accepts that the intrinsic conservation value of the three communities affected are fairly broad as they are widespread and regionally common communities that do not represent threatened ecological communities or specific habitat for threatened species known to occur in the region. Notwithstanding this, the Department required the Proponent to investigate options for offsetting the vegetation to be cleared to ensure no net loss of biodiversity values in the medium to long term.

Utilising the DECC's biobanking assessment tools, the Proponent has committed to observing a minimum 3 to 1 ratio in a like-for-like offset situation. There are no locally derived credits, nor are there likely to be in the near future, given the newness of the biobanking scheme. However, the proponent has advised that some suitable sites for vegetation offsets may be:

- areas on the forest/farmland interface where woodland remnants of poorer quality can be readily accessed, rehabilitated and protected to achieve an equivalent improve or maintain outcome; and/or.
- areas to the west of the project site where existing remnants of the Brigalow endangered ecological communities can be secured through either the direct procurement of lands or formulation of agreements with landholders willing to create suitable credits. If secured, this would achieve an offset of a vegetative community of far higher conservation value and rarity than the vegetation communities to be disturbed by the proposal.

The Department notes that the vegetation to be cleared is not critical. Notwithstanding this, the Proponent has committed to achieving a comprehensive offset package in consultation the DECC and Namoi Catchment Management Authority. The Department is satisfied that the Proponent has demonstrated that there are viable and suitable offset options available and is satisfied that with its implementation the biodiversity impacts of the project can be suitably offset consistent with maintain or improve principles. To ensure that the proposal is implemented as proposed, the Department has recommended conditions of approval that a satisfactory compensatory habitat package is finalised within 12 months of the date of approval.

5.4 Aboriginal Heritage Impacts

Issue

As part of the application process, the Proponent undertook an Aboriginal Heritage Assessment of the pipeline route (including gas gathering and compression facilities at the Bibblewindi and Bohena pilot projects) in consultation with the Pilliga Forest Aboriginal Management Committee (PFAMC) and Narrabri Local Aboriginal Land Council (NLALC). No items of Aboriginal heritage were identified. It is noted that due to the already disturbed nature of the power station site detailed assessment of this area were not considered to be warranted. Since the original Environmental Assessment was submitted, the pipeline route between "A" and "B" has changed as detailed in Section 2.2 of this report.

The DECC raised concerns that the consultation was not undertaken in accordance with the *Interim Community Consultation Guidelines for Applicants* (DEC, 2004) and that the survey effort was not thorough or expansive enough beyond the 10 metre wide gas pipeline easement. To address these concerns, the Proponent:

- advertised in accordance with the guidelines to give the opportunity for interested parties to respond to the proposal. This process identified one additional interested party – the Narrabri Gomeroi Traditional Owners Group (NGTOG);

- consulted the NGTOG regarding the already assessed survey corridor. The NGTOG advised they were satisfied with the efforts undertaken and raised no new issues for consideration; and
- carried out a new survey of the changed corridor in consultation with all three parties, with the result that no new items were found.

The Proponent also committed to undertake a broadened survey of the entire corridor with all interested parties prior to construction to ensure that any outlying cultural areas in the outer edges of the assessment corridor were identified and not disturbed during construction.

Consideration

Based on the additional assessment undertaken by the Proponent, the Department is satisfied that indigenous stakeholders have been provided due opportunity to participate in the heritage impact assessment for the project, consistent with the DECC guidelines and is satisfied that the level of survey undertaken is robust and appropriate for the project.

Whilst no item of significance has been identified, the Department has recommended conditions of approval to protect any previously unidentified items that may be discovered during the construction of the project. The recommended Conditions of Approval require the Proponent to cease construction work immediately in the event that a previously unidentified Aboriginal object or historical relic is found, and to notify the relevant authority. In addition, the Department has recommended a condition that the Proponent includes measures to monitor and manage indigenous heritage values with the involvement of the relevant Aboriginal groups in the Construction Environmental Management Plan. The Department is satisfied that subject to the implementation of the recommended conditions of approval, the project can be managed with due consideration to cultural heritage values.

6. CONCLUSIONS AND RECOMMENDATIONS

The Department considers that the proposed development including the expansion of the Wilga Park Power Station to 40 MW, construction of a gas flow line connecting gas pilot wells to the power station, and the construction of gas gathering systems and gas compression systems at the pilot wells, is justified and would entail benefits to the State of New South Wales, as it would help to secure base load electricity supply to cater for existing and future inhabitants of the State by utilising gas that would otherwise be vented and lost into the atmosphere.

The potential for environmental impacts associated with the project relate to expansion of the power station and disturbance corridor for the gas flow pipeline and gathering lines. Submissions on the proposal mainly raised concerns additional noise generated by the expanded power station and associated land use conflicts with existing and future development as well as potential ecological impacts and Aboriginal heritage impacts associated with the construction of the gas pipeline.

The Department has assessed the Proponent's Environmental Assessment, Response to Submissions, Statement of Commitments and submissions received on the project by public agencies and the community. Based on its assessment, the Department is satisfied that the Proponent has provided a robust assessment of impacts and that impacts can be mitigated to achieve acceptable environmental standards.

Although some residual noise impacts may result from the expansion of the power station, above that already approved the Department considers the project to be on balance justified, given its benefits to the broader community and because opportunity exists to minimise and/or offset noise impacts to existing and future land use.

The Department has drafted a recommended instrument of approval incorporating stringent and comprehensive environmental mitigation and management requirements which will serve to enhance commitments made by the Proponent in its Statement of Commitments.

On balance, the Department considers the project to be justified and in the public's interest and should be approved subject to the Department's recommended conditions of approval and the Proponent's Statement of Commitments.

APPENDIX A – RECOMMENDED CONDITIONS OF APPROVAL

APPENDIX B – STATEMENT OF COMMITMENTS

APPENDIX C – RESPONSE TO SUBMISSIONS

APPENDIX D – ENVIRONMENTAL ASSESSMENT